LIBRA

DOMESTIC ENGINEERING

stand the interest shown. No
r is a bathtub an ugly thing
ed on legs. It is now a well-pro
ject. It
y, and [illegible] ce
ess in the room

W TO AVOID

CA

ag-W
e Timely Advice Regarding Heating of Home.

nter is the season for colds, not
se the weather is cold, but be-
e many houses are not properly
uniformly warmed. This is the
on that doctors have voiced as
sult of investigations into the
s for the common cold, accord-
to officials of Freitag-Wein-
company, experts on plumbing
heating problems.
d weather doesn't cause colds,
rs are agreed. Colds may aris
dozens of causes, among which
overheated rooms, changing
a warm room to a cold one,
dry air which dries out the
us membrane in the nose and
oses its resistance to germs.
drafts.

There Are Many Styles.

e many different styles permit
in tubs to fit any idea. The
er bath, when connected with the
is so carefully designed that it
much to the attractiveness of
ixture. With the many shades of
shower curtains, any color scheme
e followed.
e lavatory comes in for its share
ory—a favorite now being a large
stal style with an all-white com-
ion faucet, which allows the run-
hot water to be tempered with

AYS PLUMBING SHOULD BE FIXED

ulty Work Makes "Unlivable," D J. C. Pu

here is nothing that ma
re disagreeable, more
ny time of the year than
mbing, according to J. C. P
o operates a plumbing shop a
North Federal avenue

cold weather doesn't cause colds,
doctors are agreed. Colds may aris
from dozens of causes, among which
house or remodeling an old one
are subject to absolute heat-control,
uniformity of heating and economy
in the use of fuel being their chief
virtues.

PERFECT SANITATION IMPROVES PROPERTY, LOCAL COMPANY SAYS

Wenzel Brothers Invite Public to Call Them for Information or Estimates

Adequate plumbing is essentail to safeguard life and health, and maintain personal efficiency, William Wenzel, of Wenzel Brothers, plumbers and heaters ,says. The widest distribution of modern sanitary plumbing fixtures, and their proper installation, is not only a business interest but a vital social service, Mr. Wenzel thinks.

VARIOUS COLORS IN BATHROOMS NOW USED, SAYS GAWNE, PLUMBER

With adequate space and a free hand in design, the architect of today achieves both beauty and luxurious comfort in [illegible]rooms, says Mr. Gawne of th[illegible]wne Company, plumbing [illegible]ntractors at 5521 [illegible]t. Even wh[illegible]imited, [illegible]oice

How Plumbing and Heating Contractors are

Selling Remodeling Jobs

Publicity, advertising and intensive selling are creating new business in old homes

NOVEMBER 15, 1930

Whether it be a broken pipe
whether it be a new home where
entire system of plumbing is to
ways ready to s
timate on the
k.

T TIME ING ADVISES FESSLI

Better Plumbing For B ter Homes Is His Service

In the fall of the year before heavy freezes start is the pro time to have your plumbing loo over and incidentally it is the t to look over steam and hot wa heating plants.

W .H. Fessler, an advertiser this page, is especially well fi to handle this work. Mr. Fes for many years has followed trade of plumber and employ force of workers that are equ well versed on the question.

Kitchen Units Imported.

In the kitchen of today it is poss to have an ever ready servant in electric dishwater combined with sink, made in one-piece apron des which can be obtained in various s up to seventy-two inches in len It is capable of washing and dry merely by the turning of an elec switch.

The basement should not be o looked, for there you will find sev modern appliances, the convenienc which is felt thruout the house.

PLUMBING SHOULD BE MODERNIZE

umbing and heating equipm
e modernized so that the la
aying devices that have b
the more up-to-date ma
be enjoyed by ev
Edward E. Schiel,
hop on wheels operator.
lectric sink-dishwasher,
di colored enameled fixtures
oom, laundry tubs, autom
water heaters and many other
ces planned to bring living joy
comfort to all who use them ar

KEWANEE

TYPE "R"

Steel BOILER for Smaller BUILDINGS

Just as the bigger structures have for years relied upon Kewanee Steel Boilers for dependable, low-cost heating, NOW can the smaller buildings pin their faith on the Type "R" Kewanee.

Included in it are many exclusive features—both of design and construction—to make it the best possible boiler investment for the smaller buildings.

All of these insure more heat in the building with less fuel in the basement—actual tests proving that Type "R" has an operating efficiency remarkably high for a small heating boiler.

Of outstanding interest are such features as:

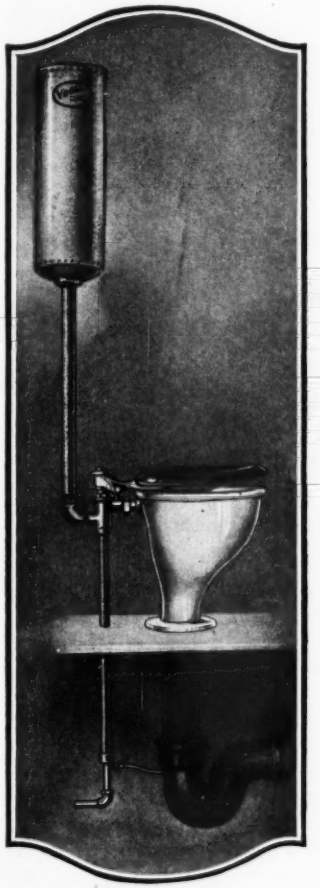
- **A bigger, higher combustion chamber.**
- **The right-side-up Crown Sheet.**
- **Long two-pass travel of gases.**
- **More generous steam space.**

For every fuel—COAL, OIL or GAS—in sizes to heat from 370 to 1960 square feet of radiation.

There is a Kewanee Steel Boiler for every budget and every heating purpose. Consult one of our Sales Engineers for the interesting particulars.

KEWANEE BOILER CORPORATION
division of American Radiator and Standard Sanitary Corporation
KEWANEE, ILLINOIS · *Branches in Principal Cities*
MEMBER OF STEEL HEATING BOILER INSTITUTE

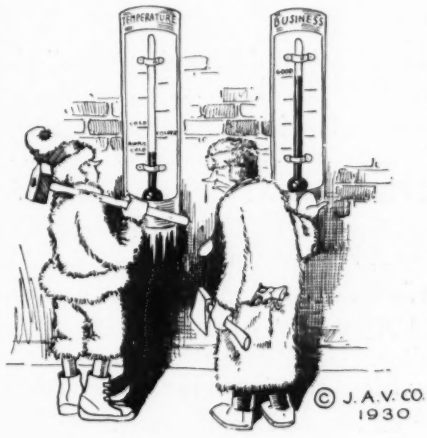
ALL OVER THE COUNTRY MILLS ARE BEGINNING TO OPERATE ON FULL TIME . . . . . .



NUMBER ONE VOGEL FROST-PROOF CLOSET

Simple in operation. Sturdy in construction. Half a million in operation.

This means more VOGEL Frost-Proof Closets and Hydrants for you to install



Coldie's Lament (No. 10000)

People may say
That business is punk,
But where Vogel's concerned
That's only the bunk.

For people all know
And every one sees
The Vogel's the closet
That never will freeze.

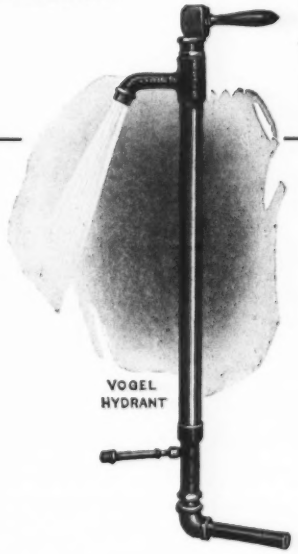
So more and more people
Are putting them in;
Which means that we're licked
Before we begin.

THERE is a lot of business now installing **VOGEL** Frost-Proofs in mill villages and in mills that have been temporarily shut down, or have been running one or two days a week.

With this increased production, and with the greater number of employees, one of the first requirements will be new closets, *and these will be* **VOGEL** *Frost-Proofs* because of the years of service they give, and the fact that a Vogel can never freeze.

Go after this business now. We are helping you get these profitable installations by our continuous advertising to your customers. Anything you need in the way of folders, blotters, or stickers will be sent promptly upon request.

JOSEPH A. VOGEL COMPANY
Wilmington, Delaware St. Louis, Mo.



VOGEL FROST-PROOF HYDRANT

Don't Neglect This Market

Private and public garages, yards of all sorts, farms, dairies, are all good prospects for Vogel Frost-Proof Hydrants. A great convenience any place.

See inside back page for VOGEL PATENTED *Seat-action closet Advertisement*

VOGEL PATENTED *Frost-Proof* PRODUCTS

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

Established 1889

Vol. 133, No. 4 | November 15, 1930 | Whole No. 1930

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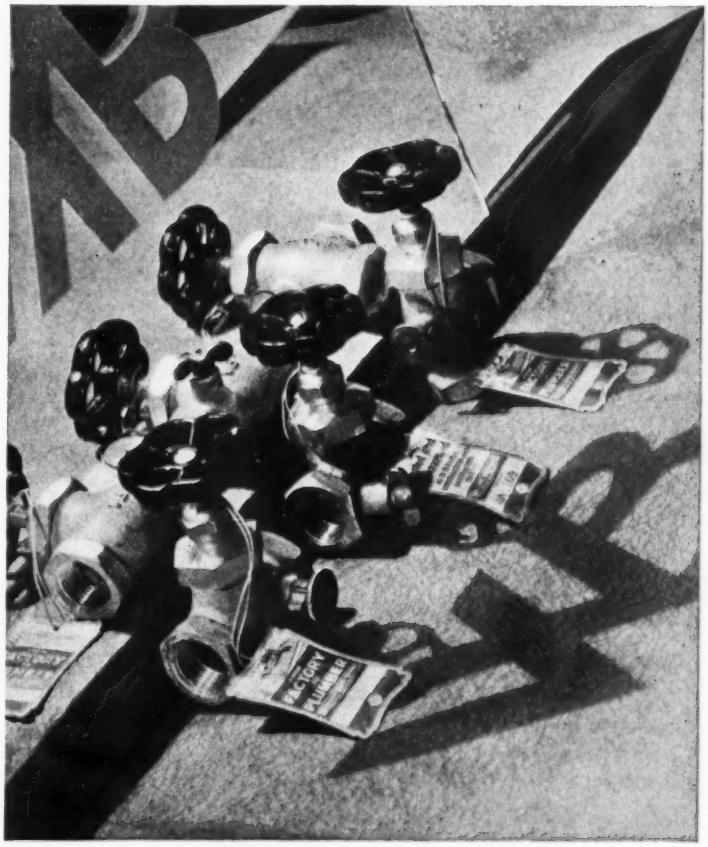
WOLVERINE

COMPRESSION STOPS . . . . . STOP AND WASTES



WE SELL THE RETAIL PLUMBING TRADE EXCLUSIVELY

ROUGH COMPRESSION WITH ALL THE INTEGRITY AND CHARACTER OF FINISHED BRASS PRODUCTS

Compression Stops and Stop and Wastes are a very important part of the plumbing system of the modern home. Though rarely used they must operate smoothly and well when called upon for actual service. . . . Weeks . . . . . months . . . . . perhaps years pass by and they are not even thought of by the home-owner . . . . . but when occasion arises for their use, he expects as flawless operation as he does of the finest fixtures in his home . . . . . That is the reason for the fine material and workmanship of all WB Rough Compression Work . . . . . with the same rigid and severe tests . . . . . and the same exacting inspection . . . . . to which all WB Compression Work is subjected . . . . . These exacting standards of manufacture go far towards materially increasing the Master Plumber's profits in this type of installation . . . . . Always easy and positive fitting with WB Rough Compression Work.

WOLVERINE BRASS WORKS
GRAND RAPIDS, MICHIGAN

DEPENDABLE
·· BRASS ··
PRODUCTS

Between Ourselves

You have the privilege this week of listening to two successful men in the industry. Our editorial columns are always filled with practical experiences of those in the field but as a treat this issue, you will want to read what the president of a large manufacturing plant and a successful heating contractor tell you. Their remarks are based on their order books.

Your Editor

WE BEND our attention so consistently to the practical concerns of plumbing and heating that we do not often permit ourselves a glance in the direction of sentiment. It is pleasant, therefore, to read the story of the modernization of the "Old Kentucky Home" hotel at Bardstown, Ky., as told by the heating contractor who handled the job, and who, although he tells us of the mechanical requirements of the job, does allow himself an excursion into the associations of the place. Traps, pipes, radiators and valves have to rival the neat little story the contractor tells of the time Jesse James "dropped in" for a meal, with four or five deputy sheriffs waiting for him in the lobby. It doesn't seem to have spoiled the outlaw's meal—although that meal would doubtless be much more comfortable today, with the modern heating plant in operation. It is certain that the hotel is going to enjoy more patronage from now on. People used to shake the dust of Bardstown off their feet as soon as possible, because hotel accommodations were not all that could be desired. The modernization enables this old, historical hotel to offer travelers first-class accommodations.

OUR cover this week shows a handful of newspaper clippings, selected at random. These are publicity items plumbing and heating contractors are securing on the subject of remodeling. What they are doing further to create new business in old homes is told in this issue in the "Plumbing and Heating Merchandising" section. As usual, there's a mine of practical selling suggestions there.

THE two most important factors in the design of a gravity hot water heating system are the pitching of the pipe lines in order to relieve the system of air, and the sizing of the pipe. There are easy methods of doing this and there are also some very complicated ones. Two time-saving methods for figuring these factors with results that will prove satisfactory in everyday practice will be found in an article in this issue entitled "Pitch and Size for Hot Water Systems," by H. A. Long.

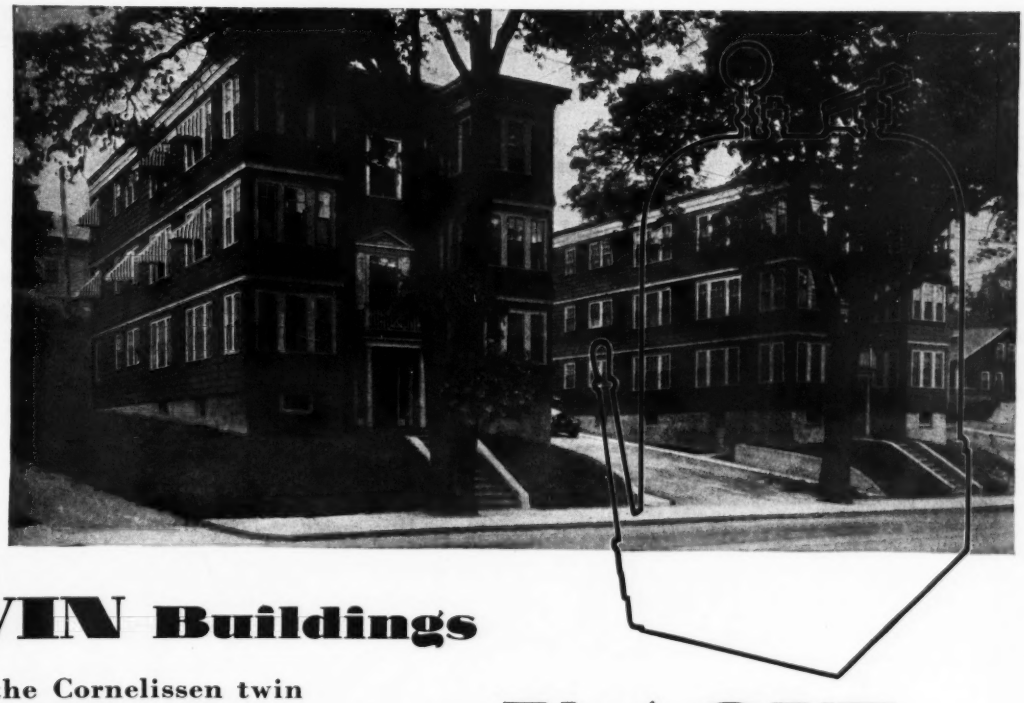
The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe.

"I FEEL that the library which is being established in the Institute office would not be complete without copies of your publication," says J. C. Keene, Secretary, at Chicago.

THE master plumber who can do the job quickly is in a better position to make a fair profit than the one who wastes a lot of time. With Winter already on hand in many sections of the country, it won't be long before calls start reaching the plumbing shop asking for a man to come out and thaw out the service pipe. When these pipes are beneath the pavement it is far from an easy matter to get the water flowing again, as it means digging down to the pipe. In this issue, J. H. Bowman describes a method of thawing service pipes by means of electricity, by which with one helper he has thawed from 10 to 15 services per day. We suggest that you read this story and put yourself in a position to get your share of this type of business during the coming months.

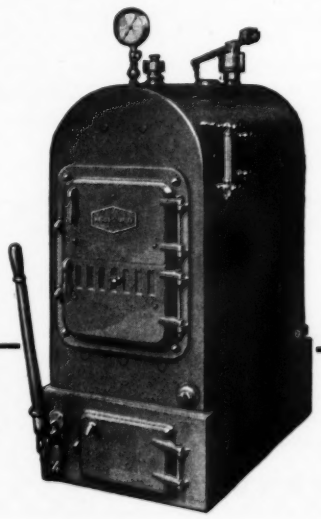
IN ANY issue of DOMESTIC ENGINEERING you find all of the essentials of a well balanced meal—or as the comedian puts it, "everything from soup to nuts." Take this issue: A selection of articles on business and selling methods drawn from the experiences of contractors who are trying things and proving them; a service to the heating contractor ranging from a new method of calculation for hot water systems, something about pipe deflection and the new engineering standards on oil fuel; the plumbing contractor learns something about the engineering tricks in putting in a three level job, those in smaller communities about the place which hydraulic rams occupy, as well as a timely suggestion on the newer methods of thawing out frozen water pipes. And don't overlook the interesting letters which are selected from those reaching the editor's desk and given you on pages 83 and 145.

NEXT week the menu will be changed but the meal will be just as satisfying. Stokers, estimating, new opportunities in swimming pool work and a selected variety of engineering and economic articles will be served to you.



TWIN Buildings

Both of the Cornelissen twin apartment buildings, Boston, Mass., contain the same amount of cast iron radiation. Both are heated with oil, using the same type of oil burner. The only difference in the heating equipment is the *boiler*. One building is heated with a single pass Heggie-Simplex Residence Type Steel Boiler. The other building is heated with a standard make of double pass residence steel boiler. The building equipped with the Heggie-Simplex Residence Type Boiler is heated at a fuel cost 20% below that of the other.



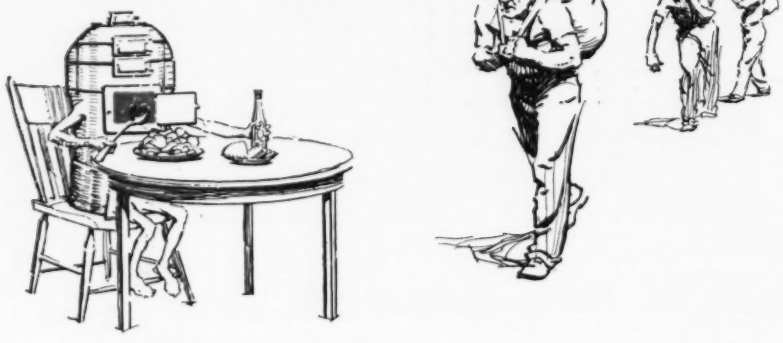
—Yet ONE is Heated for 20% LESS

AGAIN the single pass Heggie-Simplex Residence Type Steel Boiler proves its greater economy for residences and small buildings! This modern heating unit is not a "Tom Thumb" edition of the Heggie-Simplex Boiler for large buildings. It is designed specifically for buildings with radiation loads of 1730 sq. ft. or less. It is constructed to meet the requirements of these jobs, and at the same time produce the highest operating efficiency. To operate on the chimneys found in small buildings. To necessitate only morning and evening attention. To make cleaning possible in the shortest period of time and easily. To burn fuel —any fuel—with unmatched economy. To harmonize in a dignified manner with modern basement furnishings. Its durable welded steel construction not only prevents cracks, leaks and costly repairs, but minimizes insurance charges as well. For detailed information—write *Heggie-Simplex Boiler Company, Joliet, Illinois—Representatives in all principal cities.*

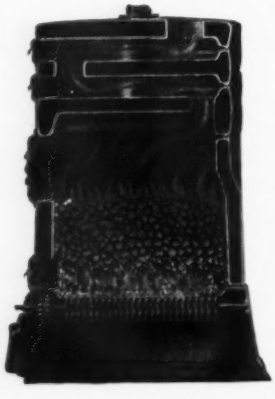
HEGGIE-SIMPLEX

STEEL HEATING BOILERS

Burnham Boilers



Every Time You See An Old Boiler Eating His Head Off There's A Chance For A Burnham Sale



Every Burnham, round or square, has this long fire travel that makes its coal bills short.

OLD boilers and some not so old, have a habit of eating more and more and working less and less.

Burnhams are built to overcome just such fuel devouring conditions. Their extra length fire travel digests thoroughly all the fuel you feed them, therefore requiring less fuel to do the same work. They eat less and heat more.

Which is one reason why they make replacement business for alert Burnham dealers.

The Catalog shows why it is easy to install Burnhams in hard-to-reach places. Send for a copy.

Send for our special prices on Flue Cleaning Brushes

Burnham Boiler Corporation

IRVINGTON, N. Y.

Representatives in all principal cities of the United States and Canada

STOKES HARD RUBBER FLOATS *are* Superior

Jos. Stokes RUBBER CO.

Trenton N.J.

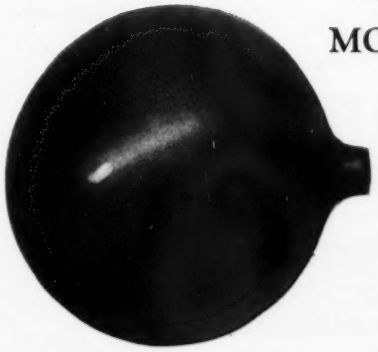
When you sell or install HARD RUBBER FLOATS made by STOKES you are insuring your reputation and that of your future business.

GOOD WILL is built by the use of GOOD PRODUCTS properly installed.

HARD RUBBER is the ideal material for floats. It cannot rust or corrode. It is resistant to acids. Its durability is unquestioned. STOKES HARD RUBBER FLOATS are so strongly made that they ***will not break*** under any ordinary conditions.

More than 33 years in the manufacture of hard rubber products of every conceivable form enable us to bring to the plumbing field a wealth of experience that we gladly place at your disposal.

MOULDERS SINCE 1897



HARD RUBBER PRODUCTS IN EVERY CONCEIVABLE FORM

YOUR NEW RESPONSIBILITY—

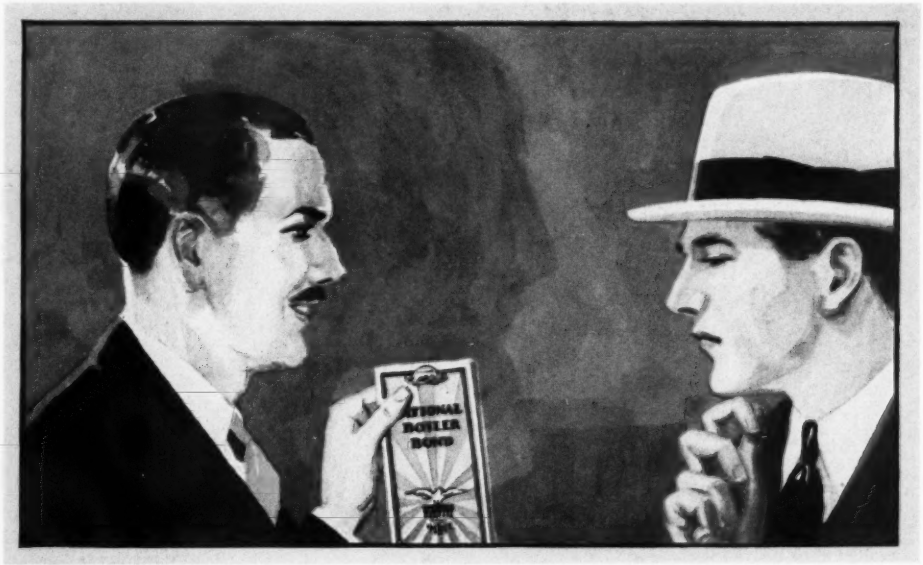
PLUMBING and heating specifications are now seldom written without the advice of a competent practical man. And in the matter of pipe selection, who is better able to recommend wisely than the man who knows its behavior under fire—how it cuts, threads and bends, holds up under pressure, its life in various classes of service.

This is your new responsibility, shared by the makers of Republic Steel Pipe. Your task to choose—theirs to turn out countless tons of dependable pipe to meet the daily growing demand. Your judgment will never be questioned if your recommendations read—"Republic Steel."

REPUBLIC STEEL
CORPORATION
GENERAL OFFICES: YOUNGSTOWN, OHIO

don't sell cast iron

sell Made-to-Measure Warmth



Make DO-ERS OUT OF DOUBTERS WITH THE NATIONAL BOILER BOND

Those prospects that waver, and can't decide —close them with the National Boiler Bond. This bond not only guarantees workmanship, material and design, BUT MOST IMPORTANT OF ALL SPECIFIES AND GUARANTEES BOILER PERFORMANCE. It builds conviction, assures satisfaction, provides the extra touch that gets names on the dotted line.

This bond is but one phase of National's revolutionary contribution to the Industry. The National *Made-to-Measure* idea has swept the country. It has subordinated price, advanced performance, in the selection of heating. It has built in the public mind a new and higher appreciation of the part the fitter plays in proper home heating. It has made the fitter a vital factor, not a neglected figure-head.

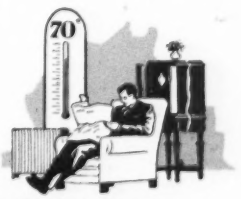
Lack of ready cash is no barrier to sales; the National Protective Payment Plan provides partial payment for your customers, complete payment to you. You earn more, on less investment.

Doubters become do-ers, when you can offer National Products, National Business Getting Ideas. If you haven't full details on National's 1930 plans, write today.

Bed Room

Grandma's Room

Bath Room



Living Room

NATIONAL RADIATOR CORPORATION

***Executive Offices:* Johnstown, Pa.**

NATIONAL

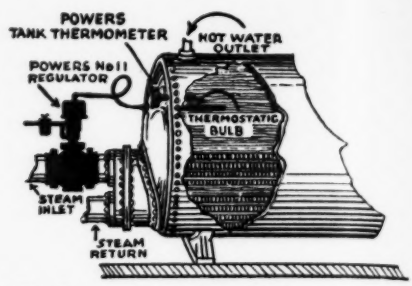
Made-to-Measure HEATING SYSTEMS

Copyright 1930—Nat. Rad. Corp.

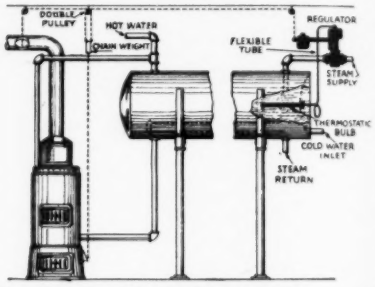
TANK REGULATORS

THE PARK PLAZA — ST. LOUIS, MO.
Architects: Schopp & Bauman
Engineer: E. T. Bradley
Heating Contractor: D. F. Edwards Heating Co.

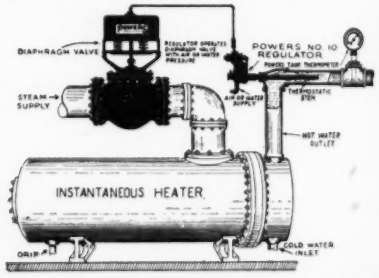
The hot water heaters in this prominent building are controlled by Powers Tank Regulators. Their first cost is often higher, but their many years of ACCURATE and DEPENDABLE service make them cost much less in the end.



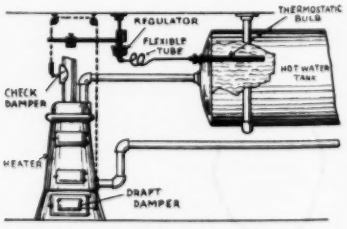
The Powers No. 11 Regulator applied to steam heated hot water tank. Self operating—accurate and durable. *Write for Bulletin No. 2035.*



The Powers No. 12 Regulator for controlling steam coil and auxiliary heater. *Write for Bulletin No. 2035.*



The Powers No. 10 Regulator operated by either compressed air or water pressure for control of large valves, swimming pool heaters, etc. *Write for Bulletin No. 2035.*



The Powers No. 13 Regulator for hot water tank heaters and garbage burners. *Write for Bulletin No. 2035.*

THE POWERS REGULATOR COMPANY

35 years of specialization in temperature control

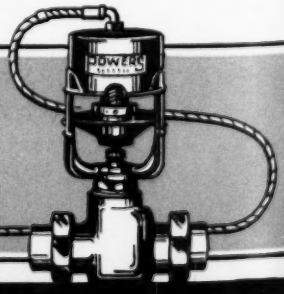
General Eastern Office
137 East 46th St., New York City

General Offices and Factory
2716 Greenview Ave., Chicago, Ill.

Canadian Powers Regulator Co., Ltd.
106 Lombard St., Toronto, Ont.

Offices in 35 other cities—See your telephone directory

POWERS



THE CELEBRATED SKIP TOOTH DIE
(Genuine Nye)
REG. U. S. PAT. OFFICE

A Letter from Harry G. Nye

November 15, 1930

To the Plumbers and Steamfitters of the U. S. A.

THIS NIGHT BASEBALL

Friends:

Night baseball, like visiting relatives, appears to have come to stay. This last season several teams played all their games in the dark, including some of those who played in the afternoon.

The idea of evening baseball, of course, is to give the fellow who works all day a chance to go to the game at night. It's a good idea, but it makes a man wonder what the bill collectors and the laundry wagon drivers are going to do with their afternoons?

How many a time you have gone to an afternoon game because the installment on the radio was due that day, and then found the collector right alongside you. When the team's in town, the way to avoid a collector is to stay home.

I went to one of these games, and have been asked (by me) to give my impressions of it. The game is not played in the dark, of course, because the field is brilliantly illuminated, to which the electric light company has no objection.

One has a little difficulty sometimes in keeping his eye on a fly, but no trouble at all in locating the mosquitoes. As far as the umpiring is concerned, it is no worse than the umpiring during the day. It couldn't be.

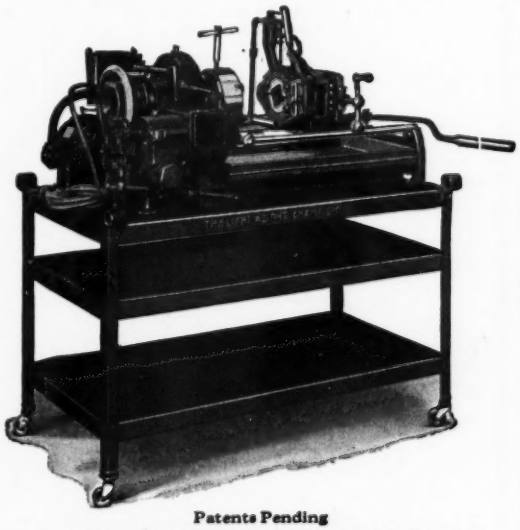
One trouble is that the game can't start till after dark. This one didn't start until 9 P. M. The teams were still tied at the end of 18 innings, when the game was called on account of daylight.

I still think that poker is the better game after 1 A. M., but night baseball has come to stay. As for the World's championship, we may yet see ourselves buying tickets for a night-blooming series.

And, let me modestly add, another thing that has come to stay is Nye Tools. Night or day, they work easier, faster, better. That is why they have always made such a hit with plumbers and steamfitters everywhere.

Yours as usual,

Harry G. Nye



Patents Pending

"THE LIGHTWEIGHT CHAMPION"

Threads—Cuts Off and Reams

Capacity ⅛ to 2 Inches

Furnished with either A. C. Motor, Universal Motor or Gasoline Engine

OTHERWISE KNOWN AS

THE NYE TOOL & MACHINE WORKS

4120-30 Fullerton Avenue :: Chicago

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THE CELEBRATED SKIP TOOTH DIE
(Genuine Nye)
REG. U. S. PAT. OFFICE

Welded Piping

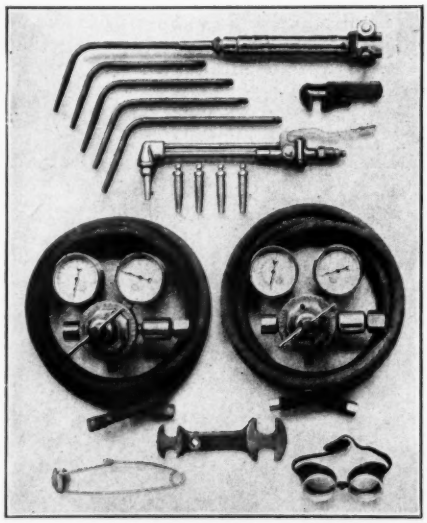
Permanent
Leak-free
Economical

How many piping jobs have you had in the last year where welding would have been the easier method of installation and given the most lasting satisfaction?

If you don't know, ask any Airco office about the possibilities of an Airco-Davis-Bournonville welding torch and cutting attachment (as illustrated) with accessory equipment and Airco Oxygen and Acetylene.

AIR REDUCTION SALES COMPANY

Lincoln Bldg., East 42nd Street, NEW YORK CITY



Airco-Davis-Bournonville Combination Welding and Cutting Outfit

Baltimore
Bettendorf, Ia.
Birmingham
Boston
Buffalo
Charlotte
Chicago
Cincinnati
Cleveland
Dayton
Detroit
Jersey City
Kansas City, Mo.
Los Angeles
Louisville
Milwaukee
Minneapolis
New Orleans
Oklahoma City
Philadelphia
Pittsburgh
Portland, Ore.
Richmond
San Francisco, Cal.
Seattle
Shreveport, La.
St. Louis
Wheeling
Wichita

Airco Oxygen - Airco Acetylene

AIRCO DAVIS BOURNONVILLE

Airco-Davis-Bournonville Welding and Cutting Apparatus—Supplies

There Is A Difference in "U.S." TANK BALLS

There IS a difference in Tank Balls and one of the real BIG differences in the "U. S." Royal Maroon Line Tank Balls is that they are exclusively yours. That means that you get the entire benefit of its quality, service and long life.

Your customer is protected by the high quality and you are protected against dissatisfied customers and complaints.

The "handy man," cannot buy and install the "U. S." Tank Balls because, like all "U. S." Royal Maroon Products, they are distributed ONLY through Selected Supply Houses.

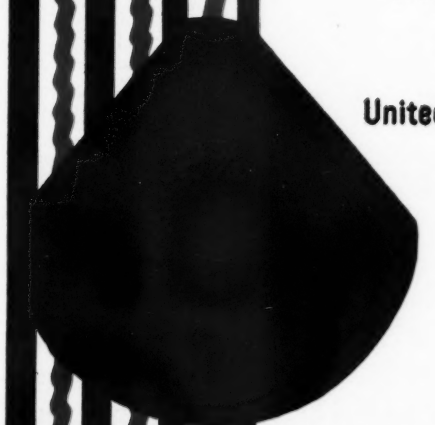
See your jobber about them today.

United States Rubber Company

TRADE MARK

1790 Broadway, New York City

No.	Size
P-1	2"
P-2	2¼"
P-3	2½"
P-4	2⅝"
P-5	2¾"
P-6	3"



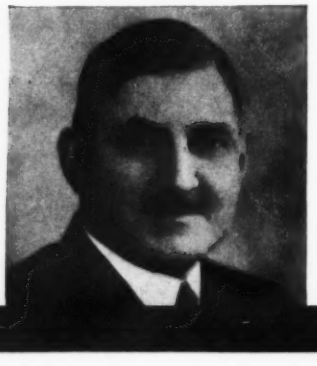
"U.S." ROYAL MAROON LINE of Plumbers' Rubber Specialties

Read *what experienced* Plumbing Contractors *say about* ANACONDA BRASS PIPE

L. P. BLACKBURN, Louisville, Ky., says: "One reason we prefer Anaconda Brass Pipe is because we can always get it promptly from our jobber."

•

JOS. W. H. GREEN, South Ardmore, Pa., says: "With Anaconda Brass Pipe, which we invariably recommend, there is never a doubt as to the quality of the material."



M. A. WALSH, Pelham, N. Y., says: "I have used Anaconda Brass Pipe with marked success here in Pelham. My customers want Anaconda quality."

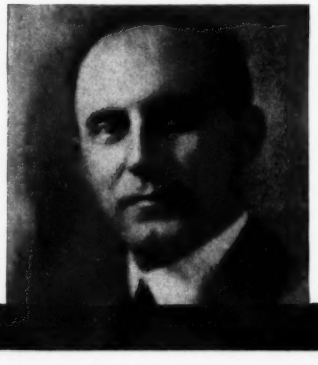
ANACONDA
from mine to consumer

D. H. FURNESS, Mgr., Fowler & Sellers Co., White Plains, N. Y., says: "We have for years recommended and standardized on Anaconda Brass Pipe."

JOHN P. CURRAN, Scarsdale, N. Y., says: "Business has increased steadily since we started specializing in Anaconda Brass Pipe."

•

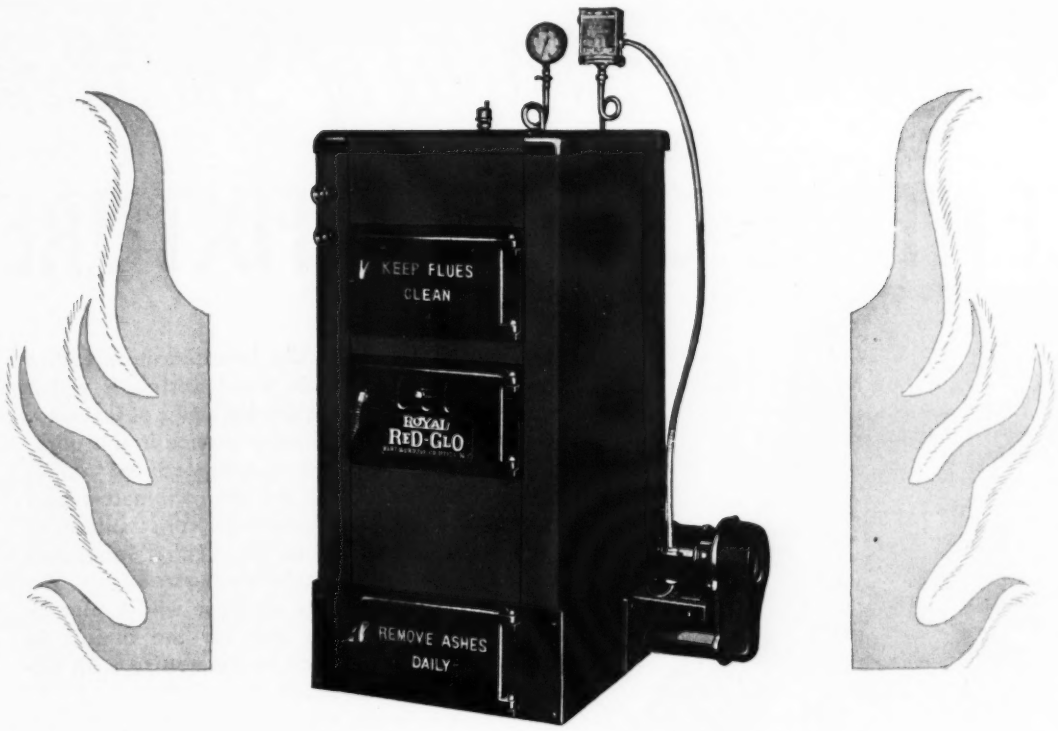
JAMES G. WERNER, Mgr., Stinson-Kennedy Co., and President of Pittsburgh Plumbing Contractors' Ass'n., says: "Anaconda advertising helps us greatly in selling quality."



ALL OVER THE COUNTRY you will find leading plumbing contractors who say that standardizing on Anaconda Brass Pipe has made their business more profitable. No long arguments are necessary to sell it. Building owners realize that this product, installed by capable workmen, means a job satisfactory in every respect.

Architects and engineers also know they can depend on Anaconda Brass Pipe. It is manufactured with the highest metallurgical skill by the world's largest and most experienced producers of Copper, Brass and Bronze. Leading plumbing supply houses everywhere stock Anaconda 67 and 85 Red-Brass Pipe and Deoxidized Copper Tubes.

THE AMERICAN BRASS COMPANY, *Waterbury, Conn.*



RED BLAST Boilers WITH BLOWER Are in Demand!

The most important development in years in the heating boiler field! There is a ready market for RED BLAST Boilers *with blower* because they burn the cheaper sizes of anthracite with remarkable results. This means a substantial saving in fuel, the blower greatly increasing the efficiency of the boiler, and requiring little attention. Automatic control assures regulated heat. Attractive new insulated jacket furnished in Cardinal Red. Long combustion chamber and flue travel. Easily assembled; individual tie rods; 18 in. and 28 in. sizes. Available, when desired, without blower and controls in the RED-GLO Boiler, which is otherwise similar to the RED-BLAST. Write for complete data about

RED-BLAST and RED-GLO Boilers

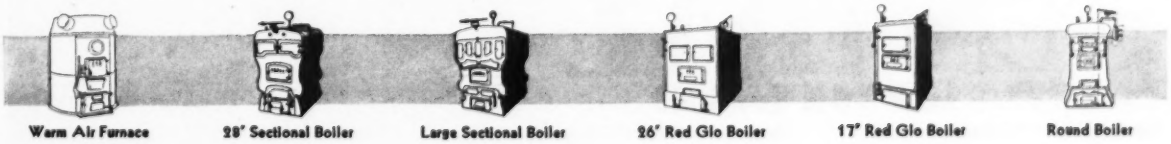
Manufactured by

HART & CROUSE CO.

UTICA, N. Y.

Boston New York Chicago Washington Detroit Pittsburgh

COMPLETE LINE OF FURNACES AND BOILERS FOR EVERY TYPE OF BUILDING



Warm Air Furnace | 28" Sectional Boiler | Large Sectional Boiler | 26" Red Glo Boiler | 17" Red Glo Boiler | Round Boiler

The New Hoffmann Hotel of South Bend

ALSO ADOPTS

CENTRAL QUALITY FIXTURES

THE new Hoffmann is the latest addition to the impressive group of South Bend hostelries which serve the transient and residential trade of that city. The significant subject of water service in this ultra-modern structure has been entrusted to Central Quality Fixtures. Thus do the originators and architect of another important enterprise subscribe to the policies implied in the Central idea, that *there is no substitute for quality.* We invite the correspondence of those whose plumbing fixture specifications call for the utmost in efficiency and appearance to harmonize with excellence of construction.

Willard M. Ellwood, South Bend, architect. John Nelson Company, South Bend, general contractors. E. J. Young & Company, Chicago, plumbing contractors. General Plumbing Supply Company, South Bend, wholesalers.

The fixtures shown are three from among many installed in the ultra-modern New Hoffmann. Above—No. 1125 Central Crometal Lavatory Combination. Center — No. 1201 Central Crometal Mixing Valve. Below — No. D 210-A Paragon Ball-bearing Self-closing Lavatory Faucet.

Central Fixtures are displayed and sold by leading wholesalers

CENTRAL
BRASS MFG. CO.
CLEVELAND OHIO.

METAPHRAM DAMPER REGULATORS

For Maximum Combustion Efficiency

One reason for the high efficiency of gas, oil or stoker-fired heating boilers is *automatic combustion control* to produce uniform boiler output.

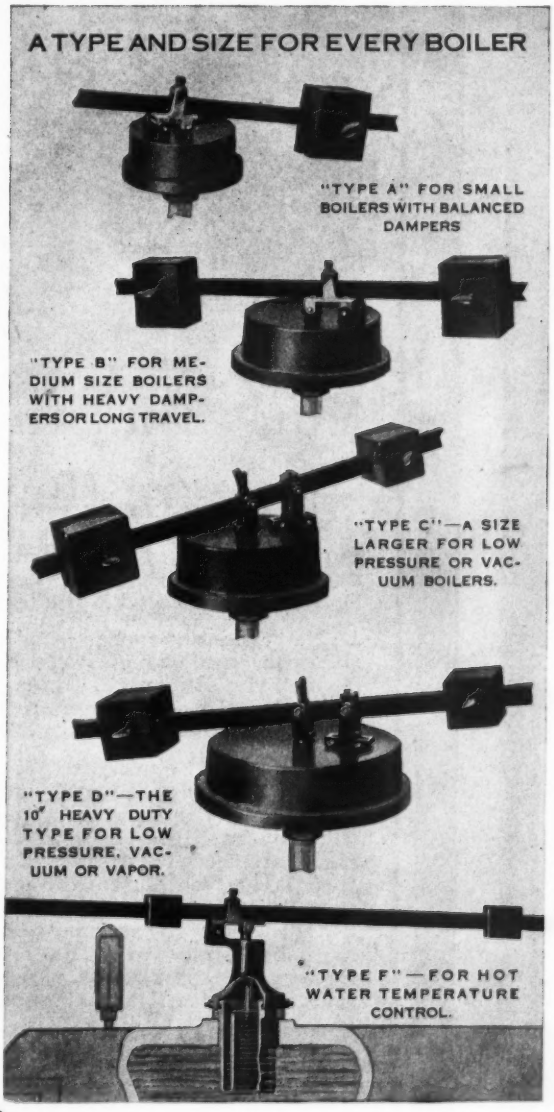
Install a properly balanced damper regulator on a hand fired boiler, adjust it to the point of desired boiler delivery, and combustion efficiency will be equal to the finest mechanical installation—lacking only the convenience of automatic firing.

The average heating contractor has a hundred service possibilities on hand fired boilers to one prospect for stoker, gas or oil.

And—while METAPHRAM Damper Regulators can't provide the convenience of automatic firing, they will insure combustion efficiency and convenience to the limit of hand firing possibilities.

There is a type and size for every domestic heating boiler—steam, vapor, vacuum or hot water; at a price that every heating system owner can afford.

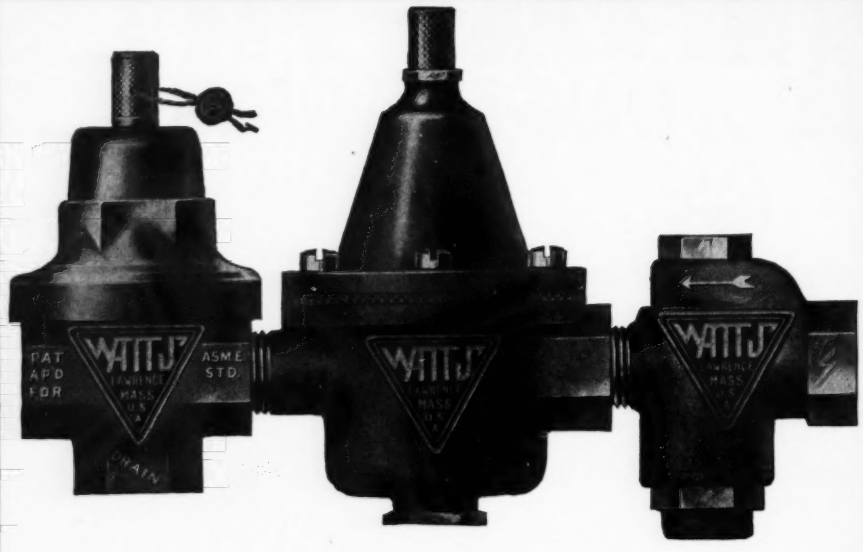
NATIONAL REGULATOR CO.
2317 Knox Ave., Chicago


A TYPE AND SIZE FOR EVERY BOILER
"TYPE A" FOR SMALL BOILERS WITH BALANCED DAMPERS
"TYPE B" FOR MEDIUM SIZE BOILERS WITH HEAVY DAMPERS OR LONG TRAVEL.
"TYPE C"—A SIZE LARGER FOR LOW PRESSURE OR VACUUM BOILERS.
"TYPE D"—THE 10" HEAVY DUTY TYPE FOR LOW PRESSURE, VACUUM OR VAPOR.
"TYPE F"—FOR HOT WATER TEMPERATURE CONTROL.

NATIONAL
National Systems of Heat Regulation and Humidity Control, Metaphram Dampers, Metaphram Meters, Industrial Thermostatic Devices, A-Jacks Steam Damper Regulator for high pressure boilers, Metaphram Damper Regulators for domestic steam, vapor, vacuum and hot water heating boilers, Metaphram Furnace Regulators.
METAPHRAM
NATIONAL Type F METAPHRAM
NATIONAL METAPHRAM

NATIONAL REGULATOR CO.,
2317 Knox Ave., Chicago
Please send us
☐ Bulletin F-100—Type F Metaphram Damper Regulator for hot water boilers.
☐ Bulletin LP-100—Metaphram Damper Regulators for low pressure boilers.

Name.....
Address.....
Town..... State.....



You *think* they're the same— but *are* they?

Far too many people are misled and fooled by taking mere appearance as an indication of the actual value of house heating units. Don't be satisfied with the looks alone of house heating units.

You may not notice much difference between a Watts Unit and the other kind at a glance — but careful comparison and service will develop the difference. After you have installed the "other kind" it is too late to get your money back — too late to satisfy your disappointed customer with "I thought they were as good as Watts."

Why not be absolutely sure before you buy that you are getting the unit of the most improved design that will give lasting service? How? By insisting that it bear the "Watts" name. Then you'll get a unit that is recognized throughout the country as the standard—a unit made by a concern that has specialized in the manufacture of water and steam regulating devices for 56 years.

Write for our Catalog No. 30 or mail the coupon.

WATTS REGULATOR CO.
Makers of Water and Steam Regulating Devices Since 1874
249 Lowell St. :: Lawrence, Mass.

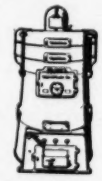
JOHN G. KELLY, Inc., U. S. Sales Associates
210 E. 45th St., New York, N. Y.

W. H. CUNNINGHAM & HILL, Ltd.
269 Richmond St., Toronto, 2, Canada

WATTS
House Heating Unit

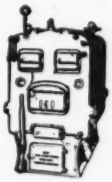
WATTS REGULATOR CO.,
249 Lowell St., Lawrence, Mass.
Without obligation, please send a copy of your Catalog No. 30.
Name.....
Address.....
Town.....State.....

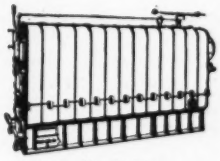
Weil-McLain Boilers fight fuel waste *and deliver more heat*


Round Type Boiler

Jacketed Boiler

Self-feed Boiler


Square Type Boiler


Smokeless Boiler

Cameo Radiator

Your Weil-McLain Distributor has a complete line of these Boilers and Radiators in all popular styles

Weil-McLain Scientific Combustion Boilers are carefully designed to take advantage of every possible factor that can contribute to fuel economy and utilization of heat. Outstanding structural advantages enable Weil-McLain Boilers to provide more heat and to save fuel. Home owners are quick to understand and appreciate these features.

30% to 40% more heat-absorbing surface

In Weil-McLain Round Boilers, for example, the crown sheet section and all other vital heat-absorbing surfaces are corrugated like this ~~~, instead of flat like this _____. These fuel-saving corrugations crowd perhaps a third more heat-absorbing surface into the same space. Equivalent heating surface is provided in all other types of Weil-McLain Boilers.

Balanced back-and-forth fire travel

More heat is actually utilized in Weil-McLain Boilers because Weil-McLain fire travel is not only back and forth but it is balanced. Variations in the rate at which boilers operate due to varying heat demands do not alter the long, balanced back-and-forth flow of gases through the flues.

There are Weil-McLain Boilers to meet all conditions — Round Type, Jacketed, Square, Self-feed and Smokeless. Also Weil-McLain "Cameo" Radiators.

WEIL-McLAIN COMPANY, General Office, Chicago, Ill.
Boiler Plant and Offices: Michigan City, Ind.
Radiator Plant and Offices: Erie, Pa.

Jobbing distributors with local stocks in most jobbing centers

Weil-McLain
SCIENTIFIC COMBUSTION
BOILERS
fight fuel waste and deliver more heat

© 1930, W-McL.

TRADE MARK

STREAMLINE

REG. U. S. PAT. OFFICE

Mueller **STREAMLINE** Hard Copper Pipe and Fittings Are the Ideal Materials for Hot Water and Steam Heating Installations

An installation of Mueller STREAMLINE Copper Pipe and Fittings in average residence buildings costs no more than any other material generally used for the purpose and is the lowest in initial cost of any non-ferrous installation. Even in larger buildings where the initial cost may be somewhat higher, if the fact is taken into consideration that copper is everlasting and its salvage value is practically 100%, even after years of use, if installed again for the same or similar service, then its cost is very much lower. In addition, smaller sizes in STREAMLINE Copper Pipe can be used on hot water lines than corresponding service in other materials generally used for the purpose.

HERE IS SOME VALUABLE INFORMATION FOR USE ON YOUR HOT WATER HEATING JOBS:

Since the shoulder inside a STREAMLINE Fitting against which the pipe rests, is the same thickness as the pipe wall, flow resistance is cut to a minimum. STREAMLINE Copper Pipe is non-clogging, thereby retaining its full, uninterrupted waterway. These qualities permit the use of the following sizes of radiator connections for gravity hot water heating in medium sized buildings or residences.

Copper Pipe Sizes	First Story	Second Story
3/8"	0-25 sq. ft.	0-30 sq. ft.
1/2"	26-60 sq. ft.	31-90 sq. ft.
3/4"	61-100 sq. ft.	91-125 sq. ft.

The size of mains must be equal to or larger in cross section than the area of all the branches; workmanship must be first class and adjustable radiator valves must be used.

Under the above conditions the Mueller Brass Company will guarantee its STREAMLINE Copper Pipe and Fittings in the above sizes to carry ample water circulation.

A Mueller STREAMLINE Copper Pipe and Fitting installation radiates very little heat and in hot water lines, steam lines, etc., can be very often installed without insulation.

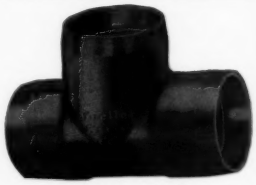
The public is fast becoming copper minded. Appearance and permanence are qualities they demand. It will pay you to become thoroughly acquainted with this amazing new installation that costs you less than any other non-ferrous material for the same purpose but gives your customer a better job and one that will last as long as the building itself.

A STREAMLINE Installation
Ypsilanti State Hospital, Unit No. 1, Ypsilanti, Michigan.
Architect: Albert Kahn, Detroit, Mich.
Plbg. & Htg. Contr.: Lorne Plbg. & Htg. Co., Detroit, Mich.

Patent 1,770,852
Patent 1,770,502
Other Patents Pending

Patent 1,770,852
Patent 1,770,502
Other Patents Pending

Patent 1,770,852
Patent 1,770,502
Other Patents Pending



Patent 1,770,852
Patent 1,770,502
Other Patents Pending

Patent 1,770,852
Patent 1,770,502
Other Patents Pending

Mueller Brass Co.

Port Huron, Mich.

Three Generations of Brass Making

Only Hoffman No. 2 Vacuum Valves have All These *Superior Features*

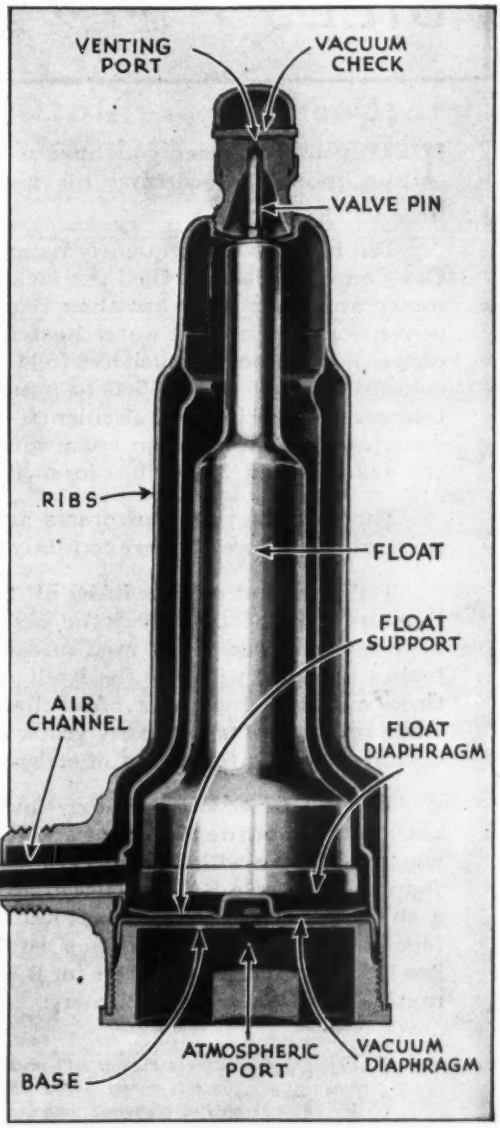
1 Double air locks (vacuum check and vacuum diaphragm).

2 Patented air channels, preventing spitting.

3 Perfect siphon, insuring quick and complete drainage of valve.

4 Snap action of float diaphragm insures wide open or tightly closed vent port.

5 Each valve factory adjusted and sealed, steam and water tested and guaranteed for five years.



IN all, 279 separate, precise operations are needed to complete one Hoffman Valve. That's why these valves give longer efficient service and require less call-backs after they are installed.

Furthermore, Hoffman valves are *easier to sell*, because millions of property owners are pre-sold for you by Hoffman advertisements appearing in national publications.

Right in your vicinity are hundreds of property owners who are eager to enjoy the comforts and economies of a Hoffmanized heating system.

Get your share of this profitable modernizing work. Let us tell you about the Trial Offer many contractors are using successfully. Write us for particulars. Hoffman Specialty Co., Inc., Dept. RX-50, Waterbury, Conn.

HOFFMAN
No. 2 Vacuum Valves
for one pipe steam systems

» » SHOW YOUR CUSTOMERS HOW TO REDUCE THEIR GAS BILLS » » » » » »

TELL your customer you have a way to save him money by reducing his gas bills—and he'll listen.

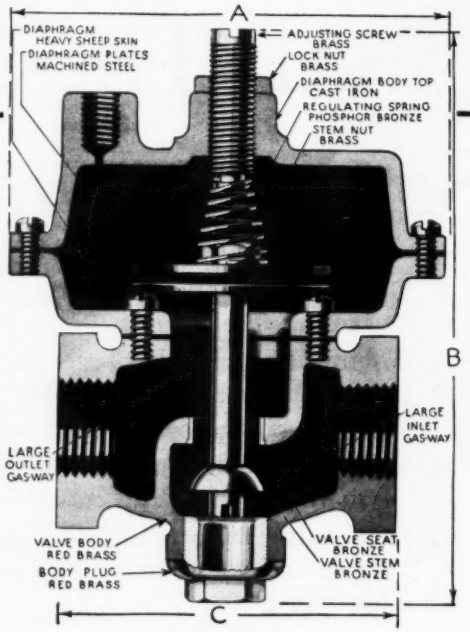
Tell him how it frequently happens that the Gas Company delivers Gas, the ideal fuel, to his meter at higher pressures than required by his conversion burner, hot water heater, or kitchen range. Sometimes as much as 6 to 12 inches water column pressure is supplied to house meters to take care of peak load requirements—whereas the American Gas Association recommends burning the gas at about 3½ inches in such appliances.

Therefore, if your customers are not using pressure regulators, they are certainly wasting gas.

Tell him that often a BARBER Superior Gas Pressure Regulator, to keep the gas pressure for all his appliances at an even and constant 3½ inches pressure will pay for itself one or more times over in a single year. And that it will continue such a saving for many years, since there's nothing about it to get out of order or wear out.

This is constructive selling—and it's profitable, as many of the Plumbing and Heating trade who are doing it will tell you. For it means more than the sale of a BARBER Regulator; it means a chance to inspect appliances and recommend repairs, replacements, and new equipment. It has led to thousands of orders for BARBER Automatic Gas "Conversion" Burners.

This proven business builder will insure good business for you this winter if you will try it. We shall be glad to cooperate with you to the fullest extent. Write for the complete sales plan, prices and discounts.



Sectional view of the BARBER Regulator. Valve body is made of red brass with all brass working parts. Super-accurate — and permanent. The BARBER Superior Gas Pressure Regulator is a precision device in every respect—at a price so moderate as to make its sale easy.

BARBER Superior Gas Pressure Regulators are made by the manufacturers of the BARBER Automatic Gas Burner.

BARBER SUPERIOR GAS PRESSURE REGULATORS

THE BARBER GAS BURNER CO. 3702-3704 Superior Avenue CLEVELAND, OHIO

ARE THESE SPECIALTIES IN THE JOB?

Drains · Interceptors · Closet Outlet Connections Shock Absorbers · Traps · Vent Stack Sleeves ·

GET acquainted with Catalog G! Any job worth going after is worth doing right. Any worthwhile job requires one or more Josam Products.

Get acquainted with Catalog G because every item in it is essential to modern sanitation. Every item is priced to permit a good margin of profit. Every item is carefully designed and accurately detailed. Josam Catalog G is your source of information on approved sanitary specialties and an aid in your selling job. Write for your copy.

We will welcome inquiries regarding the use and installation of the Josam Products listed below from Catalog G: Josam Drains for Floors, Roofs, Showers, Urinals, Garages and Hospitals; Josam Swimming Pool Equipment, Josam-Marsh Grease, Plaster, Dental and Surgical, Sediment and Hair Interceptors; Josam-Graver Floor-Fed, Gas-Fired Garbage and Rubbish Incinerators; Josam Open Seat Back Water Sewer Valves; Josam Open Seat Swing Check Valves; Josam Adjustable Closet Outlet Connections and Bends, Water and Gas-Tight.

JOSAM MANUFACTURING COMPANY
4904 Euclid Building · · · Cleveland, Ohio
FACTORY: MICHIGAN CITY, INDIANA.
BRANCHES IN ALL PRINCIPAL CITIES.

Josam TRADE MARK REG. U.S. PAT. OFF. PRODUCTS

JOSAM PRODUCTS ARE SOLD BY ALL PLUMBING & HEATING SUPPLY JOBBERS

•

THERE ARE NO SUBSTITUTES FOR JOSAM PRODUCTS

The "What" and "Why" of the A. B. C.

THE AUDIT BUREAU of CIRCULATIONS is an Association of Advertisers, Advertising Agents and Publishers who are co-operating with the object of standardizing circulation data, thereby placing space selection on a basis of known value. It also aims to discountenance practices inimical to the interests of Advertisers and Publishers.

The Bureau was established in 1914, and now numbers among its members and applicants for membership over eighteen hundred of the leading Advertisers, Advertising Agents and Publishers in the United States and Canada.

The Board of Directors is composed of 13 National Advertisers, 2 Advertising Agents, 4 Newspaper, 2 Magazine, 2 Farm Paper and 2 Business Paper Publishers.

The Publisher makes a report to the Bureau showing total circulation and details of distribution, also subscription rates and facts about contests, premiums and club offers. These statements are audited by an expert from the Bureau.

Over Ninety per cent of the circulation of daily newspapers in the United States and Canada that have a circulation of 5,000 or over is audited and verified by the Audit Bureau.

The Total A. B. C. Magazine circulation, one issue each, is over 39,000,000.

Agricultural journals, members of the A. B. C., have a total circulation of over 13,000,000.

Over two hundred and fifty business publications are members of the A. B. C. They include papers such as Domestic Engineering—the leaders in their respective lines. In some fields more than ninety per cent of the total circulation is verified by the Bureau.

The continent, from ocean to ocean, and from Hudson Bay to the Gulf of Mexico, can be covered without using a single publication that declines to have properly certified circulation data.

To confine appropriations to A. B. C. mediums is sound business practice.

In this way can be crowned the efforts of Advertisers, Advertising Agents and Publishers to replace by System and Certainty the condition which obtained before the advent of the Audit Bureau of Circulations.

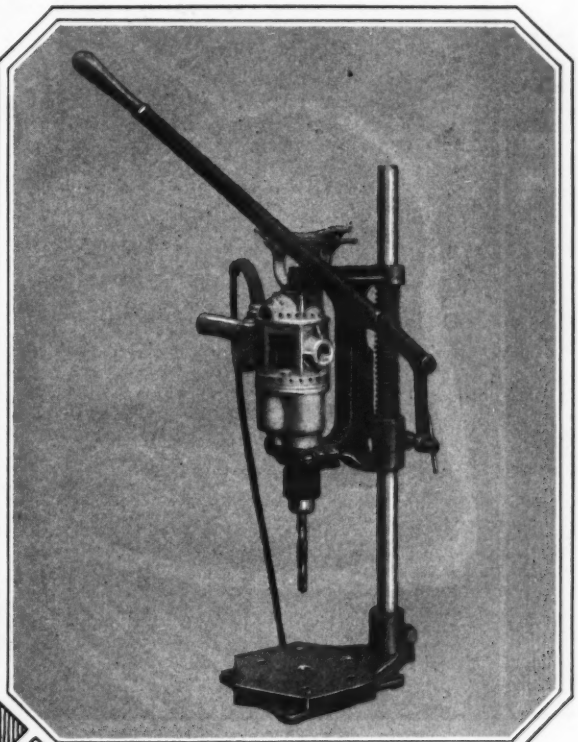
Insistently and persistently demanding A. B. C. reports is the ONLY method by which Advertising will be placed finally on an EXACT basis.

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

1900 Prairie Avenue ~ **CHICAGO**

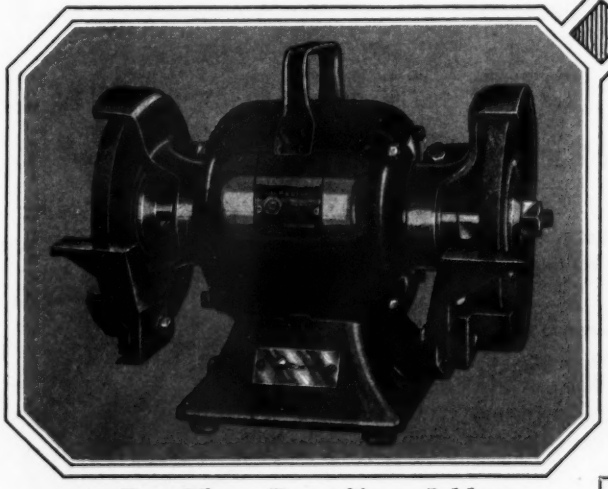
Useful Electric Tools for the Steamfitter and Plumber



Dozens of Jobs for the Famous ½-Inch Drill and Stand

DESIGNED and built for general purpose drilling, the Black & Decker ½-inch Portable Electric Drill is the most widely used drill in the world. Hole Saws, Twist Drill Bits and Wood Augers make it immediately adaptable to any drilling or hole cutting job in plumbing and steamfitting work. And the simple addition of a Bench Drill Stand immediately converts it into a strong practical Drill Press which enables the operator to exert tremendous pressure on bench work.

The drill itself is so powerful that a man cannot stall it—even when drilling in steel at its maximum capacity. Surprisingly light in weight. Driven by powerful Universal Motor, operating on A. C. or D. C., it can be plugged into any light socket or electric outlet.



6-Inch Bench Grinder for Tool Sharpening and Grinding

A POWERFUL, sturdy grinder, perfectly suited to general grinding, buffing and tool sharpening.

Wheel guards are adjustable, making it possible to grind at any position on circumference of grinding wheels. Finely balanced construction eliminates vibration. Equipped with rubber feet. Does not have to be fastened down. Lifting handle adds to convenience for use in any part of shop. Equipped with two grinding wheels—one coarse, one fine—and designed for long service with practically no attention. Speed 3000-3600 R. P. M. Made for 50-60 cycle, 110 volt alternating current. 7-inch and 10-inch sizes also available.

Buy Them From Your Jobber

BLACK & DECKER

TOWSON, MARYLAND, U. S. A.

Slough, Bucks., England — Toronto, Ontario, Canada — Sydney, Australia

Send for Catalogue of Complete Line.

The Black & Decker Mfg. Co. DE
Towson, Maryland

Gentlemen:
Send me your complete illustrated catalogue of Portable Electric Tools.

Name.....

Address.....

Jobber's Name.....

TIME—THAT TOUGH OLD TESTER—FINDS A FOE THAT FIGHTS HIM OFF

Many generations ago, Time—That Tough Old Tester—began his fight with genuine puddled wrought iron. Against that sturdy metal of which Reading 5-point pipe is made, Time first used his most potent weapon, corrosion.

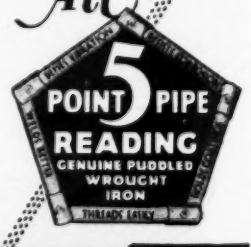
Year after year after year, Time poured his corrosive mixtures over and through 5-point pipe trying to set in action the destruction which men call rust. But no loop-holes could Time find—filaments of silicious slag barred the way. Only pipe made of genuine puddled wrought iron has proved that it can thus fight off the test of Time—the only conclusive pipe test known.

Make your first cost of pipe the last cost, avoiding damaging leaks, by insisting on Reading genuine puddled wrought iron pipe.

READING IRON COMPANY, Reading, Pennsylvania

For Your Protection, This Indented Spiral Forever Marks

All



GENUINE PUDDLED WROUGHT IRON
READING PIPE
DIAMETERS RANGING FROM ⅛ TO 24 INCHES

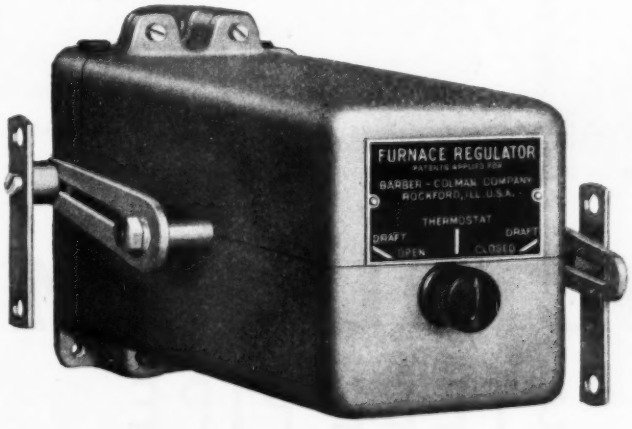
Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Wrought Iron

An ANNOUNCEMENT *regarding the* *BARCOL FURNACE REGULATOR*

The furnace regulator heretofore sold under the name of the Barcol Furnace Regulator will now be distributed exclusively by Hart & Cooley Manufacturing Co., 61 West Kinzie Street, Chicago, under the name of the

H & C AUTOMATIC HEAT CONTROL

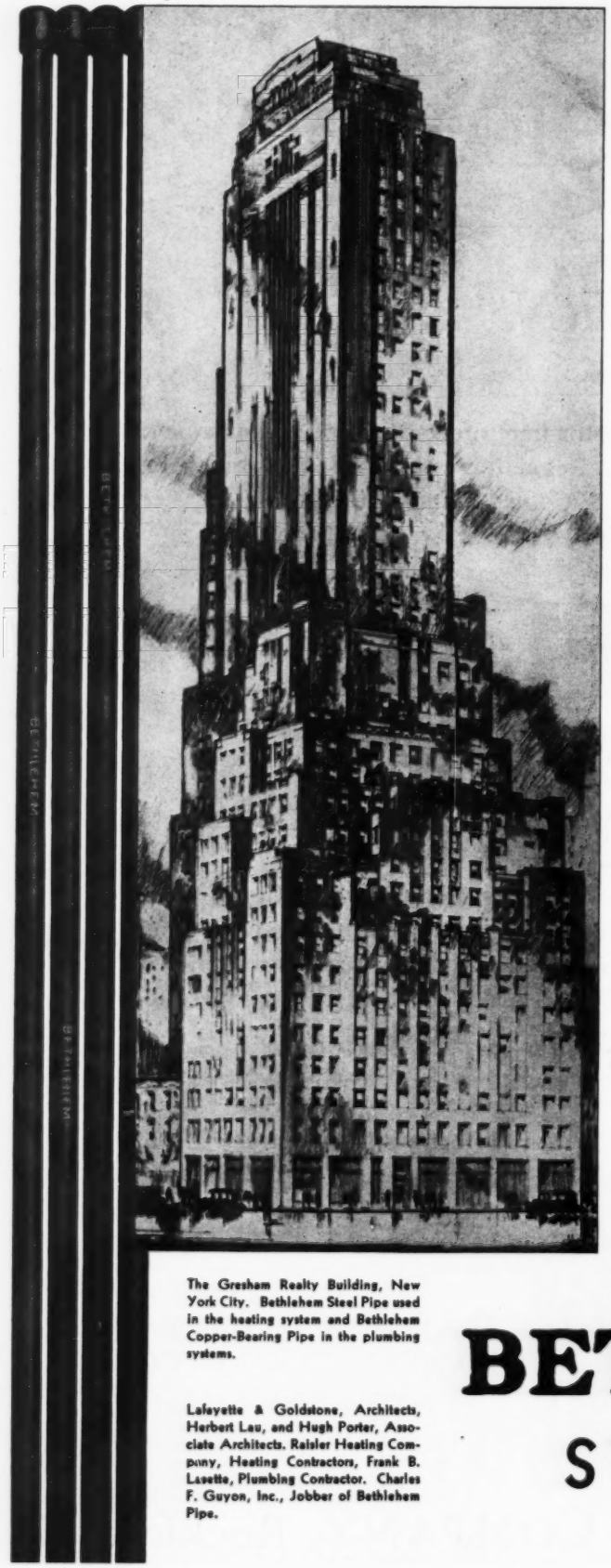
The name of Hart & Cooley Manufacturing Co. is widely and favorably known in the warm-air heating field. Their endorsement of this product is a gratifying testimonial to its excellence. We bespeak for them the co-operation and continued goodwill of the trade.



Effective immediately all inquiries regarding the H. & C. Automatic Heat Control should be addressed to:

HART & COOLEY
MANUFACTURING CO.
61 WEST KINZIE STREET
CHICAGO

BARBER-COLMAN COMPANY, Rockford, Ill.



The Gresham Realty Building, New York City. Bethlehem Steel Pipe used in the heating system and Bethlehem Copper-Bearing Pipe in the plumbing systems.

Lafayette & Goldstone, Architects, Herbert Lau, and Hugh Porter, Associate Architects. Raisler Heating Company, Heating Contractors, Frank B. Lasette, Plumbing Contractor. Charles F. Guyon, Inc., Jobber of Bethlehem Pipe.

LONG-LASTING, TROUBLE-FREE SERVICE

Whatever the size of the job, whatever the requirements, you can depend on Bethlehem Steel Pipe for long-lasting, trouble-free service.

Bethlehem Pipe is made of steel of special composition under close, expert metallurgical supervision. Each step in its manufacture, from the mining of the ore, through the finishing operations, is controlled by one organization. Before shipment, every length of Bethlehem Pipe is subjected to most critical tests and inspections, making certain that it conforms in every way to the Bethlehem standard.

You can rely on Bethlehem Steel Pipe. It reflects the results of more than half a century of experience in the manufacture of good steel and steel products. Plumbing and heating contractors are using it to an ever-increasing extent.

BETHLEHEM STEEL COMPANY
General Offices: Bethlehem, Pa.

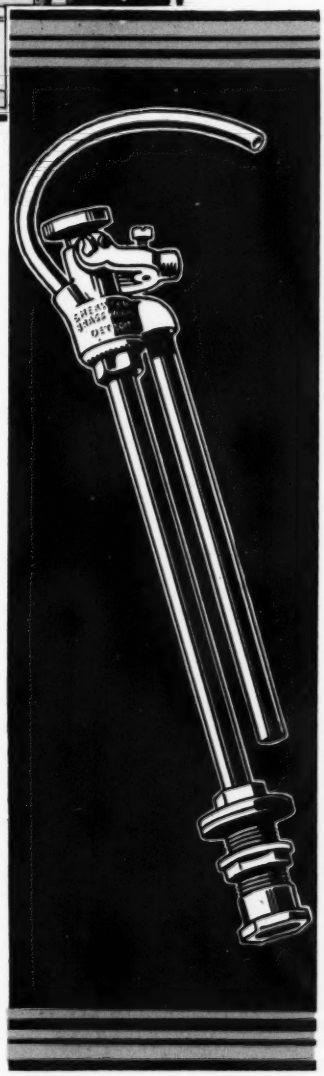
District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis

Pacific Coast Distributor:
Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland Seattle, Honolulu

Export Distributor: Bethlehem Steel Export Corporation, 25 Broadway, New York City

BETHLEHEM STEEL PIPE

pen the door to remodeling profits with Sherwood Ball Cocks.....



Have you a Sherwood Ball Cock on hand right now? If you haven't, order one from your jobber and as soon as you get it, start right out around your community. Ask housewives if they are troubled with noises in the closet tanks, if whistling and gurgling are common faults with the tanks.

You'll find hundreds who will say yes. Show them the Sherwood Ball Cock. Explain to them that the one they have is probably worn, or, if it's new, just hasn't been built to overcome those faults. Explain how the Sherwood will close against any city water pressure without annoying noises and without leaking.

Ask them to let you install a Sherwood. You'll find they'll want this relief. Then, when you've finished *that* job, look around for leaky faucets, etc. or perhaps a whole new bath room But let Sherwood open the door to remodeling profits *now!*

Alexoid
RED BAND
MOW-COMPOSITE

Where water conditions are below normal and where they take a toll in wear from ball cocks, install the Sherwood Red Band (Alexoid) Ball Cock. It has been designed to meet the worst conditions in the best manner and is but slightly higher in price.

SHERWOOD BRASS WORKS

Jefferson and Mt. Elliott Aves. » » DETROIT, MICH.

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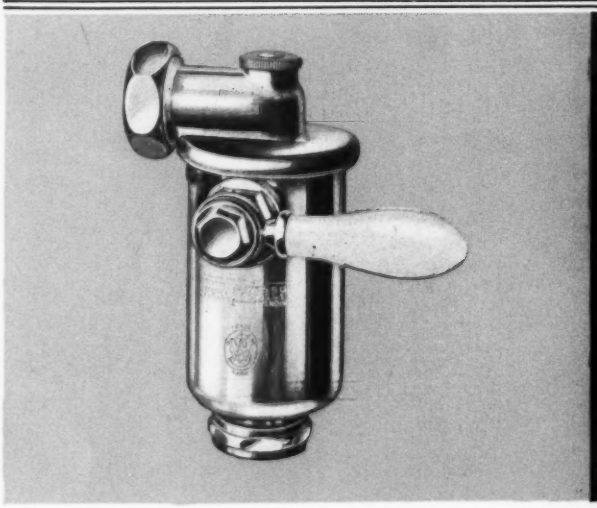
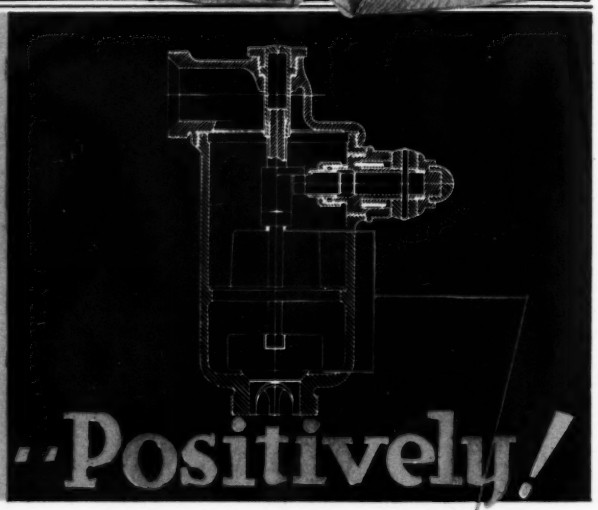
SHERWOOD Ball Cocks

...Measured Flush?





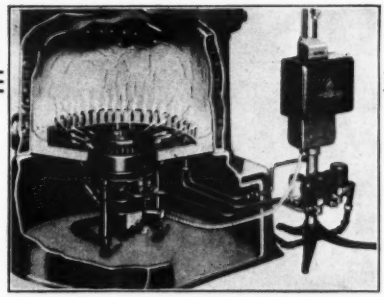
...Positively!

the reason is simple

In Smith & Wesson Flush Valves the Flush is constant. This is because of the hydraulic governor, which controls the volume of water as well as the valve in seating. When the valve is once set the quantity of the flush never varies until a new adjustment is wanted. Because of this accuracy, Smith & Wesson Flush Valves can be relied upon to give a dependable flush at all times.

SMITH & WESSON
FLUSH VALVE DIVISION
SPRINGFIELD MASS.

SMITH AND WESSON FLUSH VALVES



AT LAST!

The TRUTH about the "*Wiping* WALL-FLAME"

*M*ost important of the mechanical reasons why you should COMPLETE every installation with a Silent Automatic oil burner . . . and pocket two profits . . . is the fact that Silent Automatic alone has the "*Wiping* WALL-FLAME".

The "*Wiping* WALL-FLAME"

This slowly swirling flame constantly licks the entire wall of the fire-pot at grate level. The result is maximum over-all heating efficiency. Because of the quality of this slow flame, the furnace lasts longer. Moreover, this flame burns softly . . . it is never disquieting.

The "*Wiping* WALL-FLAME"

Because the "*Wiping* WALL-FLAME" enables the burner to work at peak efficiency, all the time it is running, heat is obtained just as fast as it is needed, even in the most responsive heating systems.

The "*Wiping* WALL-FLAME"

Home-owners are familiar with the principle and advantages of the "*Wiping* WALL-FLAME", because working with coal furnaces has taught them how maximum heating efficiency is obtained. Many other heating specialists are boosting their profits with "Silent" and its "*Wiping* WALL-FLAME". It's up to *you.*

SILENT AUTOMATIC CORPORATION
12001 East Jefferson Ave. Detroit, Mich.

For Warm Air, Steam and Hot Water Heating Systems—Old or New Homes

SILENT AUTOMATIC
THE NOISELESS OIL BURNER

Made by the World's Largest Producer of Domestic Oil Burners

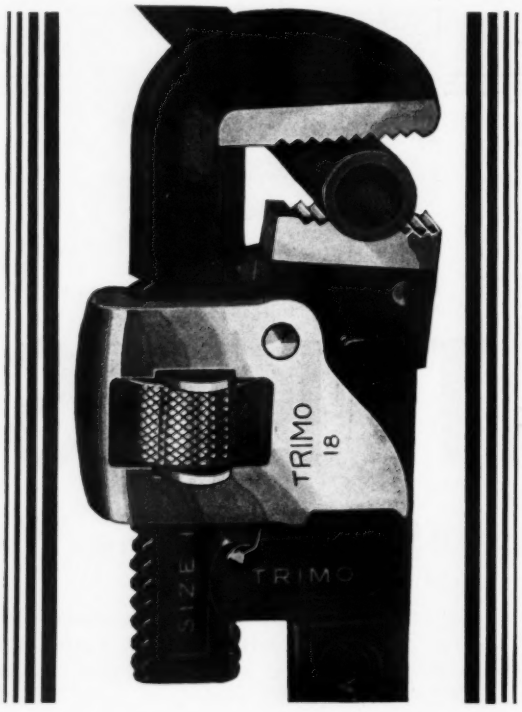
C O U P O N

SILENT AUTOMATIC CORPORATION

Send me a copy of your booklet, "Silent Automatic Oil Heat for the Home" . . . immediately.

Name_____
Company_____
Address_____
City_____ State_____

(371)



If you could check over our orders

A check-up of our pipe wrench orders for some 40 years back would give you a fair idea of the lulls and booms in the upward march of the plumbing business. Naturally we sell more TRIMO wrenches in good times.

What is more interesting is this. There is proof positive in those figures that the plumbing and heating trades find all-steel TRIMO the logical choice for their pipe wrench needs. The unchanging position which TRIMO holds in the plumbing business is based on steadily maintained quality.

TRIMO stands first in strength, long service and honest value.

ALL STEEL TRIMO PIPE WRENCH

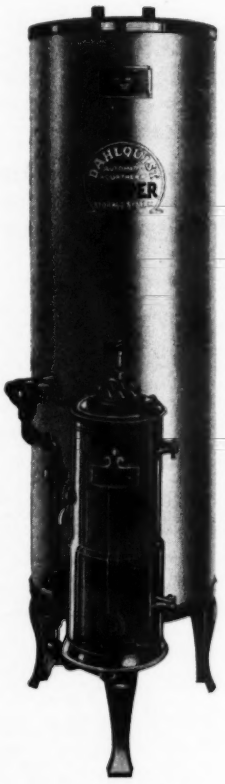
Handle drop forged - - - not cast

Made by Trimont Mfg. Co., Roxbury (Boston), Mass.

TRIMO

The New Dahlquist
TURBO-AQUATHERM

(U. S. Patent No. 1,762,215 June 10th, 1930)



Automatic Gas Unit with Side Arm

Experts have long recognized that the ordinary hot water boiler serves as an efficient sediment trap. This is due to the fact that it contains a relatively large volume of quiet water and hence any sediment or insoluble matter which normally remains in suspension in the water lines gradually sinks to the bottom of the boiler.

This continual accumulation of sediment is one of the greatest enemies of the efficient satisfactory operation of the hot water boiler. If allowed to accumulate long enough it will cause surges of muddy water in the hot water line and form an insulating blanket on the bottom between the water and the metal itself which is the greatest cause of burnouts. Furthermore hot water accumulated in the ordinary boiler becomes stagnant and unsuitable for domestic purposes.

The TURBO-AQUATHERM

(U. S. Patent No. 1,762,215, June 10 1930)

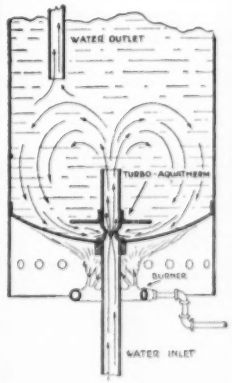
In order to absolutely prevent the accumulation of sediment which is the great enemy of the efficiency and life of hot water boilers, Theodore W. Dahlquist has invented a device called the TURBO-AQUATHERM which takes advantage of the velocity of the incoming cold water to create a suction and a whirl which constantly sweeps and scours the bottom of the boiler, carrying every particle of foreign matter out of the system. No sediment can ever accumulate in the Dahlquist TURBO-AQUATHERM Copper Boiler and the water is always as fresh as that in the cold water lines and may be safely used for cooking as well as for other household purposes. Furthermore, the danger of burnouts in automatic storage and underfired systems is eliminated and the thermal efficiency of the boiler is greatly increased. The accompanying sketch shows clearly the action of the TURBO-AQUATHERM, which may be had with little additional cost on all Dahlquist range boilers and automatic storage systems.

Write now for full particulars regarding this revolutionary improvement in hot water boilers.

Ask for full information regarding the Dahlquist complete line of copper range boilers. Copper, gas, electric and oil combinations. Copper automatic storage systems and large industrial units for all purposes.

Super-Aquatherm Gas Underfire

Automatic Electric Unit



Arrows show action of water when drawn thru TURBO-AQUATHERM, scouring bottom of boiler and preventing any accumulation of sediment.

Dahlquist Mfg. Co.

30 West 3rd Street So. Boston, Mass. U. S. A.

SPECIAL NOTICE

to

Plumbing and Heating Contractors

You can secure without charge, upon request, catalog sheets of any or all of the manufacturers listed below for use in loose-leaf binder.

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Domestic Engineering handles the Speedlok binder which is especially designed to hold standardized sheets. The price of the binder is $3.00.

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Central Radiator Co	New York City
Central Specialty Co	Detroit, Mich.
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Chicago Pump Co	Chicago, Ill.
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Cleveland Heater Co	Cleveland, Ohio
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Enterprise Brass Works	Muskegon, Mich.
Erie Tool Works, The	Erie, Pa.
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Lewis Sanitary Tool Co ..... Quincy, Mass.
Liquid Veneer Corp ..... Buffalo, N. Y.
Lissberger & Son, Inc., Marks ..... Long Island City, N. Y.
Little Giant Mfg. Co ..... Minneapolis, Minn.
Locke, Stevens & Sanitas, Inc ..... Boston, Mass.
Lowe Mfg. Co ..... Detroit, Mich.
Lucke, Wm. B ..... Wilmette, Ill.
Lytton Mfg. Corp ..... Franklin, Va.

McCaffrey Mfg. Co ..... Chicago, Ill.
McCoy Mfg. Co., Inc ..... New York City
McDonnell & Miller ..... Chicago, Ill.
McGurrin Supply Co ..... Grand Rapids, Mich.
Malleable Iron Fittings Co ..... Branford, Conn.
Marsh & Co., James P ..... Chicago, Ill.
Martin & Sons, H. P ..... Owensboro, Ky.
Marvel Machine & Brass Works ..... Cleveland, Ohio
Meer Made Products ..... Chicago, Ill.
Meneley-Diederich Co., Inc ..... Los Angeles, Cal.
Michigan Pipe Co ..... Bay City, Mich.
Milford Iron Foundry ..... Milford, Mass.
Miller Co., Chas. A ..... Sturgis, Mich.
Milwaukee Stamping Co ..... West Allis, Wis.
Milwaukee Valve Co ..... Milwaukee, Wis.
Minneapolis-Honeywell Regulator Co ..... Minneapolis, Minn.
Misener Mfg. Co., Inc ..... Syracuse, N. Y.
Modern Iron Works ..... Quincy, Ill.
Modine Mfg. Co ..... Racine, Wis.
Mohawk Septic Tank Co ..... Schenectady, N. Y.
Molby Boiler Co., Inc ..... New York City
Moore, F. J ..... Minneapolis, Minn.
Morton Mfg. Co ..... Chicago, Ill.
Muller, Edward ..... North Bergen, N. J.
Multicell Radiator Corp ..... Lockport, N. Y.

Nash Engineering Co ..... South Norwalk, Conn.
Nason Mfg. Co ..... New York City
National Pipe Bending Co ..... New Haven, Conn.
Neptune Meter Co ..... New York City
Newark Brass Works ..... Newark, N. J.
New Britain Machine Co ..... New Britain, Conn.
Newbury Mfg. Co ..... Monroe, N. Y.
Newbury & Son, Jay H ..... Goshen, N. Y.
New York Air Valve Corp ..... New York City
New York Blower Co ..... Chicago, Ill.
New York Brass Foundry Co ..... New York City
Northern Indiana Brass Co ..... Elkhart, Ind.
Northwestern Chemical Co., The ..... Marietta, Ohio
Nustone Products Corp ..... Union City, N. J.
Nye Tool & Machine Works ..... Chicago, Ill.

O-E Specialty Mfg. Corp ..... Milwaukee, Wis.
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Ohio Heater Co., The ..... Columbus, Ohio
Olsen, H. T ..... New York City
Oster Mfg. Co ..... Cleveland, Ohio

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Para Rubber Co ..... Newark, N. J.
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Plomb Tool Co ..... Los Angeles, Cal.
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Portland Iron Works ..... Portland, Ore.
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Radiator Specialty Co ..... Charlotte, N. C.
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Reed Mfg. Co ..... Erie, Pa.
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Rhode Island Fittings Co ..... Providence, R. I.
Richards Corp ..... Pittsburgh, Pa.
Richardson & Boynton Co ..... New York, N. Y.
Richmond Foundry & Mfg. Co., Inc ..... Richmond, Va.
Ridge Tool Co ..... Elyria, Ohio
Riverside Boiler Works, Inc ..... Cambridge, Mass.
Riverside Foundry & Galvanizing Co ..... Kalamazoo, Mich.
Robbins, Gamwell & Co ..... Pittsfield, Mass.
Robertshaw Thermostat Co ..... Youngwood, Pa.
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Rochester Circulator Co ..... Rochester, N. Y.
Rock Island Mfg. Co ..... Rock Island, Ill.
Rockford Brass Works ..... Rockford, Ill.
Royal Brass Mfg. Co., The ..... Cleveland, Ohio
Royal Textile & Mfg. Co ..... Detroit, Mich.
Rumsey Pump Co., Ltd ..... Seneca Falls, N. Y.
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Stoll, Chas. J ..... New York City
Stow Mfg. Co., Inc ..... Binghamton, N. Y.
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Stuart & Co., D. A ..... Chicago, Ill.
Swett Iron Works, A. L ..... Medina, N. Y.

Taco Heaters, Inc ..... New York City
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Trenton Brass & Machine Co ..... Trenton, N. J.
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Vinco Co., Inc ..... New York City
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Vogel Co., Joseph A ..... Wilmington, Del.
Vulcatex, Inc ..... Chicago, Ill.

Wade Iron Sanitary Mfg. Co ..... Chicago, Ill.
Walker Dishwasher Corp ..... Chicago, Ill.
Wall Mfg. Supply Co., P ..... Pittsburgh, Pa.
Walworth Company ..... Boston, Mass.
Ware Coupling & Nipple Co ..... Ware, Mass.
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Watts Regulator Co ..... Lawrence, Mass.
Weis Mfg. Co., Inc., Henry ..... Elkhart, Ind.
Wesley Co., Chas ..... Chicago, Ill.
Wessels & Sons, D. D ..... Detroit, Mich.
Western Wire Products Co ..... St. Louis, Mo.
Westinghouse Electric & Mfg. Co ..... East Pittsburgh, Pa.
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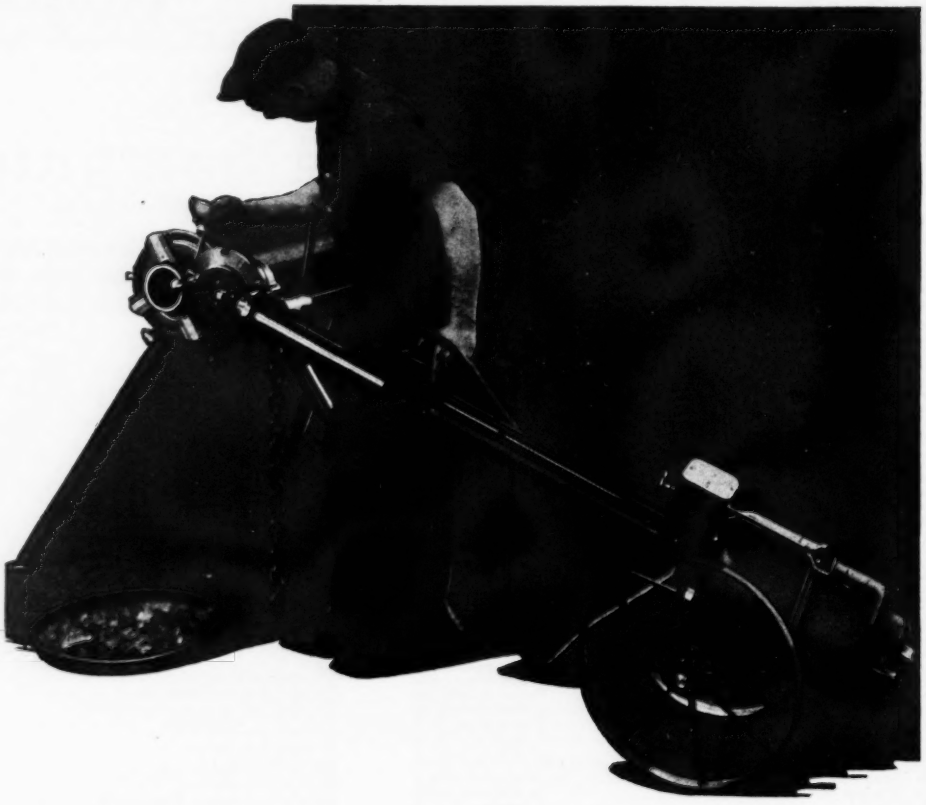
Wilbur & Williams Co ..... Boston, Mass.
Wilks Mfg. Co., S ..... Chicago, Ill.
Williams & Co., J. H ..... Buffalo, N. Y.
Wood Mfg. Co., John ..... Conshohocken, Pa.
Worcester Brush & Scraper Co ..... Worcester, Mass.

"X" Laboratories ..... New York City

Yeomans Brothers Co ..... Chicago, Ill.
Yost Mfg. Co ..... Meadville, Pa.

Zurn Mfg. Co., J. A ..... Erie, Pa.



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THE TOLEDO PIPE THREADING MACHINE COMPANY

TOLEDO, OHIO **NEW YORK OFFICE, 72 LAFAYETTE STREET**

DOMESTIC
ENGINEERING
NOVEMBER 15, 1930

Our Industry

An eastern reader sends us a clipping from a Brooklyn newspaper.

♦ ♦

The story it tells is old but the point of the story is still as sharp as ever.

♦ ♦

A large bass in an aquarium was separated from an adjoining batch of appetizing minnows by a glass partition. The big bass tried for some time to reach them, only to bump his nose against the glass barrier. So he quit.

♦ ♦

One day the glass partition was gradually removed. But you could not fool the bass.

♦ ♦

He knew better and never tried to reach the minnows.

♦ ♦

Without taking time to talk about the moral of this story—at a time like today when those people who go after business are getting some and those who are waiting for business get none—here is the experience of several contractors who have bumped their noses against the barrier many times but have refused to quit.

♦ ♦

A contractor had just told us of a nice order he took even though the customer said, "I hate to give you this job and to spend this money."

♦ ♦

But this plumbing contractor had accepted the job from his customer, a hotel owner, a year ago, and had given him good service.

♦ ♦

That job had meant the remodeling of a few suites in the hotel into single rooms with modern plumbing and heating conveniences.

♦ ♦

In following up the results, the contractor discovered that the remodeled rooms were constantly in demand.

♦ ♦

The old suites were only occupied about 25 per cent of the time.

♦ ♦

The profit to be gained by permitting the contractor to remodel these suites was so obvious that after the customer, as quoted above, showed his reluctance to place the order he went ahead to say, "But I can not afford not to remodel."

♦ ♦

But it was the plumbing and heating contractor who showed him he was losing money by delaying the job.

♦ ♦

An Ohio contractor working, as it happens, with another hotel owner showed him where the installation of shower stalls would permit the hotel to charge $2.50 instead of $1.25 for its small rooms.

♦ ♦

This hotel job opened up as a prospect for two of these stalls.

♦ ♦

Instead the order was placed for 14 stalls.

♦ ♦

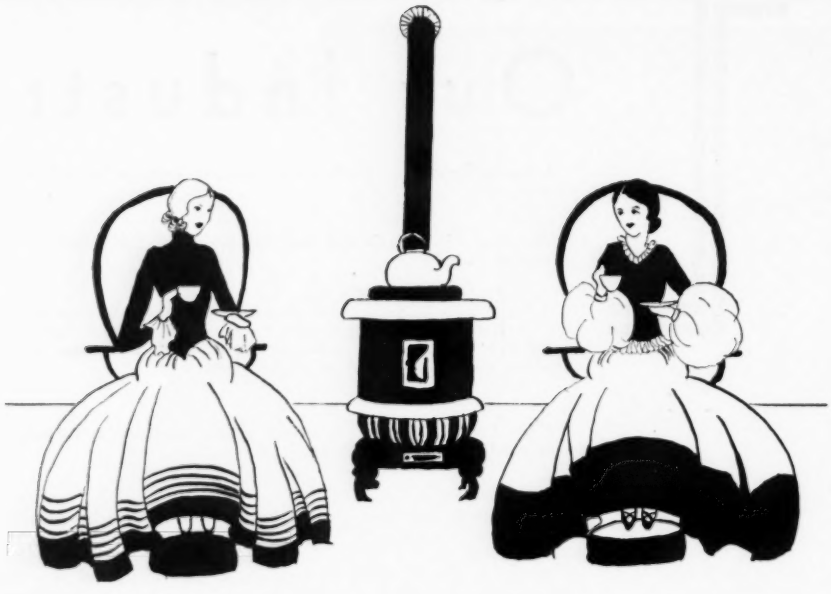
And next year the owner promises to re-equip his entire hotel.

♦ ♦

These men are getting the prizes that the big bass doesn't even try for.

◆

Some people make business, others take it. Put your money on the first one.



Modernization of "My Old Kentucky Home" Hotel Brings Business

BETTER than a hundred years ago John Rowan built a mansion down in Bardstown, Ky., since immortalized by Stephen Collins Foster as "My Old Kentucky Home." Foster often visited this stately dwelling during the summer season, as did kings and statesmen and presidents, but none lingered after cold weather came, not even the Rowan family. Knowing the severity of a winter in this wilderness, they sought comfort and greater gayety in the larger settlements as soon as it grew cold, and so, although huge fireplaces were provided in each large room, fires have never yet been kindled in them.

In recent years as in those olden times, travelers have scurried through Bardstown in search of a warmer place to spend a winter evening, for hotel accommodations have been inadequate and out-of-date. This situation has been unprofitable from a business standpoint to the town and of great inconvenience to its visitors, thousands of whom come each year to see "My Old Kentucky Home" and other points of historical interest near there.

To improve this situation and provide a hospitality worthy of its name, the present owner has modernized the "Old Kentucky Home Hotel." This old, old building which has housed travelers, and many famous ones, for many years, has been remodeled to meet the requirements of today's public. In the old dining room,

B. M. Blunk, who wrote this story, is a successful heating contractor in Louisville. He says: "Knowing that there was only a certain sum available for the modernization program, we determined to keep within the allowance made for the heating plant, thus following our usual policy of placing a greater value on customer good will and permanent friendship than on the immediate sales we might make."

now so modern as shown in the illustration, Jesse James, the bandit, sat one day, his famous horse hitched just outside. A friend ran into the room warning Jesse that a sheriff and five deputies were in the lobby to "get" him, and that he had better leave by the back door. Jesse informed him that he never went out a back door, and with each hand on a gun he stalked past the sheriffs in the lobby, without so much as a

The system to be remodeled was:

Checked and rechecked
Held within cost limits
Tested for cracked boiler sections
Made the basis for future contract

Changes included:

Increase in radiation
Correction of faulty piping
Installation of pump

move on their part, walked out the front entrance, mounted his horse, and rode away.

Times and the hotel have changed since then. The building has been redecorated throughout, new rooms and new baths have been added, and the part of the program in which we were most interested was the remodeling of the heating system.

Remodeling the Heating System

The stoves formerly used were replaced about twenty years ago with a two-pipe gravity return steam heating system which never gave satisfaction. Because of improper installation it pounded and knocked and heated first here and then there and then not at all.

We looked the old installation over carefully, checked and rechecked it, and then recommended what we considered the changes necessary to give them an efficient heating plant at a reasonable cost. Our estimate contemplated the use of the old equipment wherever it was practical. Other contractors recommended the installation of a new boiler and an entire new piping system which from a technical standpoint seemed to be the only solution of their heating problem, but knowing that there was only a certain amount of money available for their modernization program, we determined to work with them in an endeavor to keep within the allowance made for the heating plant, thus following our usual policy of placing a greater value on the good will and permanent friendship of a customer than on the immediate sales that we might make.

Traps Sold—Valves Serviced or Replaced

The radiation was found to be sufficient in each of the old rooms except the dining room. We added radiation and installed new type radiators there. Radiators were also installed in each of the new rooms and baths. The original radiators, though of the old style pattern, as shown in the photograph, were in keeping with the old-fashioned, high-ceilinged rooms, and as far as possible we used the same type in the additional radiation we furnished. We equipped each radiator with a thermostatic trap—no traps being installed on the old job—and all valves were serviced or replaced.

The boiler, while old, is of standard make and of sufficient capacity to carry the original load and the additional radiation we have added. Before accepting the contract, we tested the boiler for cracked sections and found it in good order except for minor repairs, as door linings, grates, and new covering. It was almost buried in dirt and debris, however, and the workmen had to dig for half a day before they could clear out around the base of it. The picture shown was taken after the boiler was unearthed and some work had been done on it.

Piping in Basement a Problem

The basement was a perfect maze of pipes running zigzag. Only a small portion of the basement is excavated—just room enough for the boiler and the coal pile—so that to fully appreciate the piping arrangement one had to crawl back into the unexcavated portion where there were all manner of trapped lines, chain hangers,

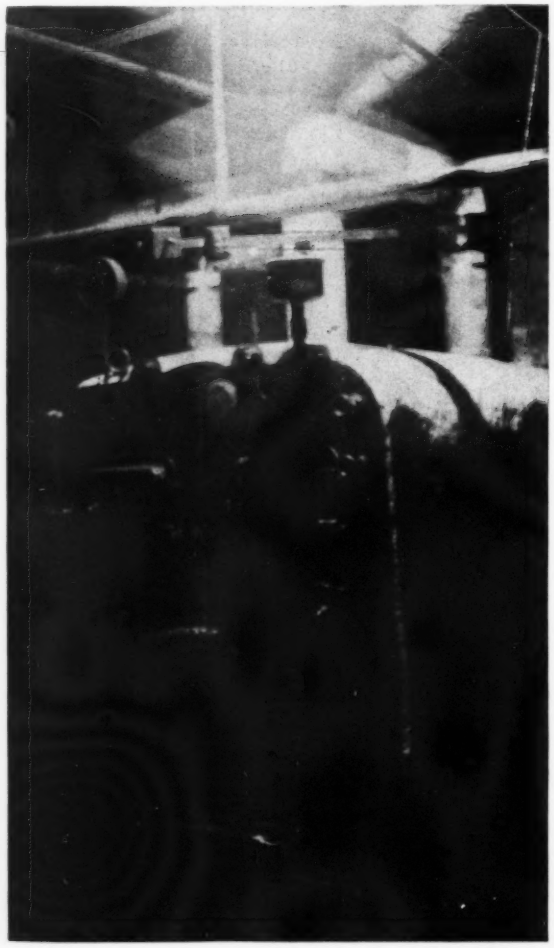
The radiation was found to be sufficient in each of the old rooms except the dining room. Here additional radiation was installed. When finished, the radiation was painted the same color as the walls

wire hangers running at every angle imaginable, and other relics of the dark ages of steam heating.

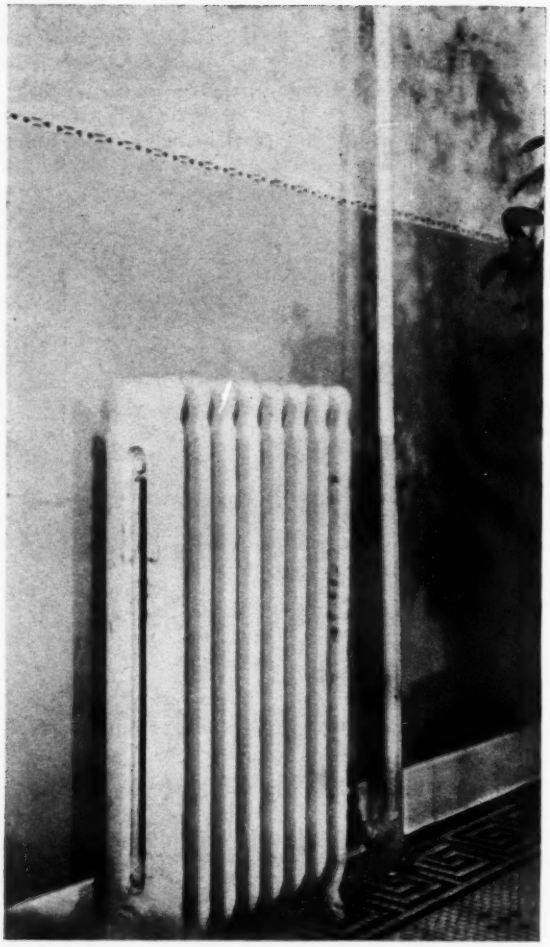
There was not sufficient water line on the old system and pipes were too small for a gravity installation as may be readily noted from the illustrations. Many of the risers were only ½ in. or at the most ¾ in., and the hotel is a three-story building. To offset this difficulty we installed a condensation and vacuum pump, for it would indeed have been a costly job to have replaced the trapped and inadequate lines to give radiators the proper circulation.

The whole proposition was pretty much of a gamble on our part, but we had checked it thoroughly enough to be convinced that we were not taking such a big risk after all, and true to our expectations, but contrary to generally recognized good heating practice, when the trapped lines were corrected and certain minor changes were made in the piping, the whole installation heated from top to bottom and heated quickly, even before the pump was connected. After the pump was hooked up there was simply no stopping the heat and the speed with which it traveled.

If we were to attempt to go into the details of the small but necessary changes made to bring about this result, the story would have no end and would have to come from the competent foreman whom we put in charge of the job and who raised a pipe here and lowered one there and used his own good judgment as to the best way out of a tangle. There was really no one thing that you could put your finger on and say that it was the cause of the trouble they had always had with the heating plant.



Many of the risers were only ½ in., or at the most ¾ in., and the building served was three stories high. A condensation and vacuum pump was installed to offset this difficulty



Each radiator was equipped with a thermostatic trap, no traps being installed on the old job, and all lines were either serviced or repaired. Old style radiation was used where possible to harmonize with building

We agreed to install certain radiators, to make necessary repairs to boiler, to install a vacuum and condensation pump, to connect all return lines through this pump, to give all piping proper drainage, to make necessary piping changes to obtain complete circulation throughout the entire system, and to guarantee that when these changes had been made that the radiators would heat throughout their entire length, and that the rooms in which radiators were located would be heated to 70 deg. Fahr. in zero weather. The management feels that we have more than lived up to our agreement and assures us that we are very much in line for a contract on the addition which they plan for a later date.

After the installation was put in order, was tested thoroughly, and was found to be working properly, we

(Continued on Page 154)

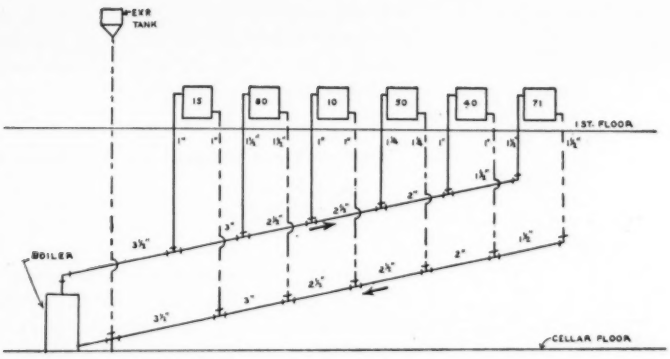


Fig. 1.—The sizes shown on this drawing are worked out in detail by the method of combined valve areas

Pitch and Size

two time saving methods of figuring these important factors

for Hot Water Systems

By H. A. LONG

WHILE gravity hot water heating is not as popular in this country as some of the numerous forms of steam heating, there are many individuals who would not consider any other method of heating as the equal of hot water. As long as such is the case instances will be encountered where gravity hot water heating installations must be made and, in order to give satisfaction, such systems must be properly designed.

The two most important factors in the design of a gravity hot water system are the pitching of the lines, so as to relieve the air, and pipe sizing. While it is difficult to go into details concerning pitching the lines in an abstract article of this character it may be said in general that all piping should pitch up to some high point, from which the air should be relieved through an expansion or vent pipe, and that no pockets or high points should be installed which are not so vented.

As far as pipe sizing is concerned it always has seemed that ultra-theorizing on hot water pipe sizes is a great waste of valuable time with no guarantee that any practical results will be accomplished. Few engineers would be daring enough to install a complicated system of ventilation without volume dampers to control the air flow and the ones who are daring to this point of foolhardiness soon learn to their sorrow that ventilating systems cannot always have the ductwork installed exactly as shown on the drawings and that air sometimes has ideas of its own as to where it wants to travel.

It is just as shortsighted to install a gravity hot water system without throttle valves on the radiator returns as it is to install a ventilating system without volume dampers. Both are for the same purpose, viz., to control the flow in such a way as to force the medium contained into the channels desired, and in the quantity needed.

Now there are easy methods of sizing gravity hot water heating systems and there are also some very complicated ones. When the less difficult methods will give the results desired there is little to be gained by going to the ones requiring a greater amount of time and labor even though the results attained may be somewhat more scientifically correct. There is no doubt that in America

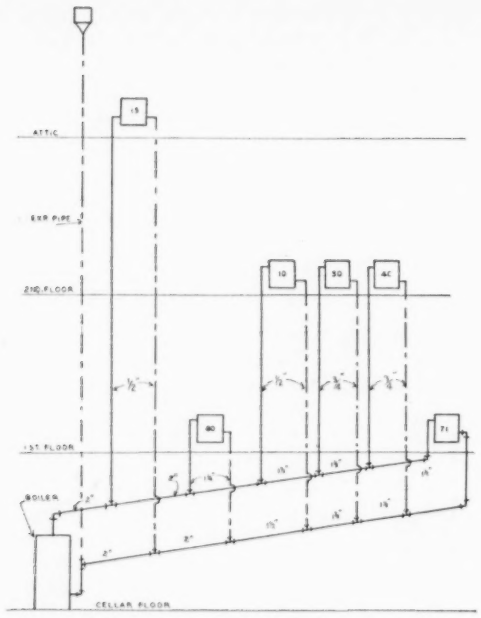


Fig. 2.—The method of sizing based upon the height of radiator above the boiler was used to obtain the pipe diameters listed in this drawing

we are using larger pipe sizes for gravity hot water heating systems than anywhere else in the world. In England, France, Germany, Russia and in some parts of the Orient gravity hot water heating is being done with pipe sizes which seem to compare in America with the steam pipe sizes which would be employed for the ordinary vacuum steam job having radiators of equal size. Whether these countries are not as exacting in their demands for good heating or whether a greater temperature drop in the water is combined with a more generous size of radiator is a question. Here in America, however, it is best to stick to past practice and experience, until we produce systems with faultless circulation, before the matter of reducing pipe sizes is considered.

Simplest Method of Pipe Sizing

One of the simplest methods of sizing pipe on a small size gravity hot water job is to base the sizes on combined valve areas. That is to say, the area of each main is made equal to the combined areas of all the radiator valves which the main supplies. Of course, the valve sizes are made to agree with the standard tappings provided on the inlets and outlets of hot water radiators and these standard tappings are quoted in Table I. The only other information necessary to have is the internal cross sectional areas of the various standard sizes of pipe, and these are given in Table II.

Table I
Standard Tappings for Hot Water Radiators

Up to 40 sq. ft. inclusive	1 in. x 1 in.
Over 40 sq. ft. to 72 sq. ft.	1¼ in. x 1¼ in.
Over 72 sq. ft.	1½ in. x 1½ in.

For example, what size of line would be required in a small gravity hot water heating system, such as is illustrated in Fig. 1, in which the radiators taken off the line (beginning farthest away from the boiler) consist of a 71 sq. ft., a 40 sq. ft., a 50 sq. ft., a 10 sq. ft., an 80 sq. ft., and a 15 sq. ft.? Beginning at the farthest radiator and referring to Table I it is found that the standard hot water radiator tappings will be as follows:

71 sq. ft.	1¼ in. x 1¼ in.
40 sq. ft.	1 in. x 1 in.
50 sq. ft.	1¼ in. x 1¼ in.
10 sq. ft.	1 in. x 1 in.
80 sq. ft.	1½ in. x 1½ in.
15 sq. ft.	1 in. x 1 in.

The main supplying these radiators will then have connections off of it as follows:

Radiator Sq. Ft.	Valve In. Dia.	Valve Area Sq. In.	Size of Pipe In. Dia.	Pipe Area Sq. In.
71	1¼	1.50	1¼	1.50
40	1	0.86	1	0.86
—		—	—	—
111		2.36	2	3.35
50	1¼	1.50	1¼	1.50
—		—		
161		3.86	2½	4.78
10	1	0.86	1	0.86
—		—		
171		4.72	2½	4.78
80	1½	2.04	1½	2.04
—		—		
251		6.76	3	7.39
15	1	0.86	1	0.86
—		—		
266		7.62	3½	9.89

In the case of the first radiator of 71 sq. ft. it is found that the standard tapping is 1¼ in. x 1¼ in. so the radiator valve will be 1¼ in. The area of the valve is 1.50 sq. in. (see Table II) and, consequently, a 1¼ in. pipe is sufficient except that, because of being the last radiator on the line, probably 1½ in. pipe would be used. When the second radiator of 40 sq. ft. is considered, it is found that the standard tapping and valve is (Table

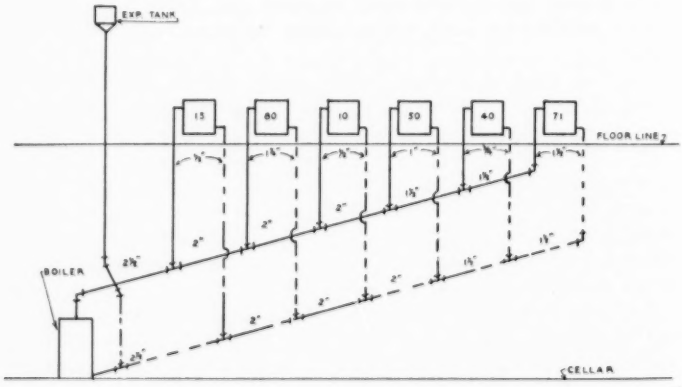


Fig. 3.—Details of the application of the system of sizing to a bungalow installation

I) 1 in. with an area of 0.86 sq. in. Therefore the branch to this radiator also will be 1 in.; but when the branches from the two radiators are connected together there is a combined valve area of

1.50 sq. in. + 0.86 sq. in. = 2.36 sq. in.

and, referring to Table II, it is found that the smallest

Table II
Internal Cross Section Areas of Standard Pipes

Size of Pipe In. Dia.	Area Sq. In.	Size of Pipe In. Dia.	Area Sq. In.
½	0.304	3½	9.89
¾	0.533	4	12.73
1	0.86	5	20.0
1¼	1.50	6	28.9
1½	2.04	8	50.0
2	3.35	10	78.8
2½	4.78	12	113.1
3	7.39		

pipe having an area greater than the combined valve area of 2.36 sq. in. is a 2 in. pipe which has an area of 3.35 sq. in.; this is the size to use. This scheme, of adding together all the valve areas supplied by any particular portion of the line and making the area of the line at least as much as the combined valve areas supplied, is followed all the way down until the last radiator and the one nearest the boiler is reached, giving the sizes indicated in Fig. 1.

A Method of Sizing Based on Height of Radiator

A more rational and economical method of sizing piping consists of one where the height that the radiator stands above the boiler is considered. This method is based on the fact that better circulation is obtained when the radiator is located a considerable distance above the level of the boiler than when the radiator is close to the boiler level. For this purpose Table III is recommended.

If, in the previous installation, the first radiator (71 sq. ft.) and the fifth radiator (80 sq. ft.) had been set on the first floor with the second radiator (40 sq. ft.), third radiator (50 sq. ft.) and fourth radiator (10 sq. ft.), on the second floor while the sixth radiator (15 sq. ft.) was located in the attic, all arranged as illustrated in Fig. 2, no change in pipe sizes from that shown in Fig. 1, would have occurred in using the valve area method since the valve area schedule does not take the height of the radiator above the boiler into consideration.

In using Table III, however, the sizes of the risers or branches first will be determined and then the mains will be made the equivalent to the risers thus:

Radiation Sq. Ft.	Height above Boiler Ft.	Size of Riser In. Dia.
71	5	1¼
40	15	¾
50	15	¾
10	15	½
80	5	1¼
15	25	½
266		

Now to combine all these risers and branches into a corresponding main the equivalent pipe size must be

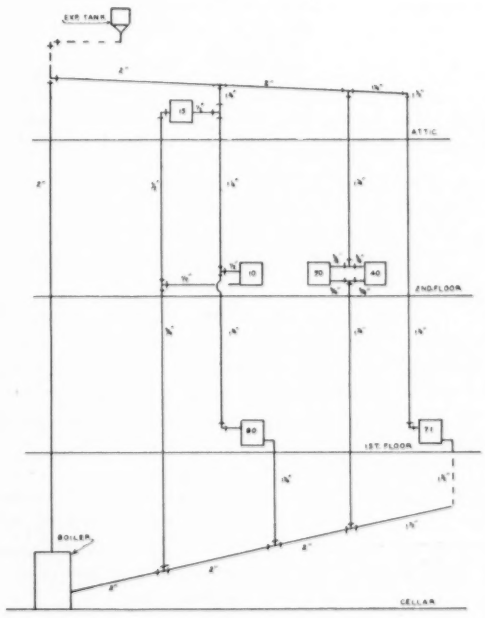


Fig. 4.—The altitude method applied to a concrete case where the system is of the overhead, downfeed type

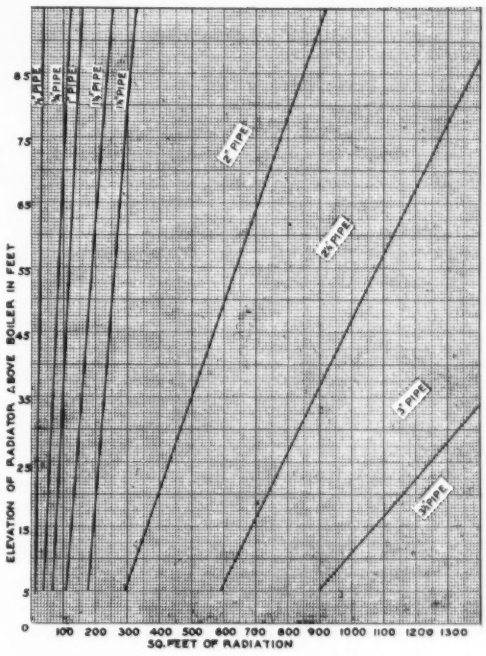


Fig. 5.—For those who prefer to read the pipe sizes direct without the use of calculations or tables, this graph has been presented

taken from Table IV and beginning as before, at the last radiator, the following is the result:

Radiator Sq. Ft.	Riser or Branch In. Dia.	Factor	Pipe Size In. Dia.	Pipe Factor
71	1¼	20	1¼	20
40	¾	5	¾	5
—		—		
111		25	1½	30 (main)
50	¾	5	¾	5
—		—		
161		30	1½	30 (main)
10	½	2	½	2
—		—		
171		32	2	60 (main)
80	1¼	20	1¼	20
—		—		
251		52	2	60 (main)
15	½	2	¾	5
—		—		
266		54	2	60 (main)

This indicates that with the radiators set at the various elevations assumed it would be possible to reduce the size of the main at the boiler (as determined on the valve area basis) from 3½ in. to 2 in. (as worked out on the elevation basis). However, if this system had been installed in a bungalow or one-story residence, as shown in Fig. 3, the size of main would have been greater by the elevation method as is shown below:

Radiator Sq. Ft.	Elevation Ft.	Size of Branch In. Dia.	Factor	Size of Pipe In. Dia.	Factor
71	5	1¼	20	1¼	10
40	5	¾	5	¾	5
—			—		
111			25	1½	30 (main)
50	5	1	10	1	10
—			—		
161			35	2	60 (main)
10	5	½	2	½	2
—			—		
171			37	2	60 (main)
80	5	1¼	20	1¼	20
—			—		
251			57	2	60 (main)
15	5	½	5	¾	5
—			—		
266			62	2½	110 (main)

In this the total factor is 62 as against the total factor of 54 previously calculated. Had all the radiation been placed on the fourth floor a reduction of even the 54 factor is possible as will be seen from the fourth floor calculations given herewith:

Radiation Sq. Ft.	Elevation Ft.	Riser In. Dia.	Factor	Pipe Size In. Dia.	Factor for Pipe
71	35	1	10	1	10
40	35	¾	5	¾	5
—			—		
111			15	1¼	20 (main)
50	35	¾	5	¾	5
—			—		
161			20	1¼	20 (main)
10	35	½	2	½	2
—			—		
171			22	1½	30 (main)
80	35	1	10	1	10
—			—		
251			32	2	60 (main)
15	35	½	5	¾	5
—			—		
266			37	2	60 (main)

From which it indicates that the required factor for the main at the boiler is only 37 or quite close to a 1½ in. pipe, although not close enough to permit using this size. It is thought that this table is sufficiently flexible to suit almost any condition and is easy to use in determining pipe sizes. It already has been employed in two very large installations and has given perfect circulation results.

Overhead Down-Feed Systems

The application of the valve area method to overhead down-feed systems should not require any explanation

Table III

Sizes of Risers for Various Elevations Gravity Hot Water Heating

Elevation in Feet	5	15	25	35	45	55	65	75	85
Stories above Boiler	1	2	3	4	5	6	7	8	9
Size of Pipe and Radiator Valve—									
½ in.	15	20	25	30	35	40	42	45	47
¾ in.	40	50	60	70	80	90	100	110	120
1 in.	70	80	90	100	110	120	130	140	150
1¼ in.	110	117	135	147	170	187	205	222	240
1½ in.	180	195	210	230	245	260	275	295	310
2 in.	300	375	450	500	575	650	700	775	850

for the area of each pipe is simply made at least equal to the sum of all the valve areas which the pipe supplies. Naturally the main supply riser going to the top of the building must have an area in square inches equal to the sum of the areas in square inches of all the valves in the building. Thus a main riser which feeds 50—½ in. valves, 75—¾ in. valves, 25—1 in. valves and 10—1¼ in. valves must have an area of

$$(50 \times 0.30) + (75 \times 0.53) + (25 \times 0.86) + (10 \times 1.50)$$

or

$$15.0 + 39.75 + 21.50 + 15.0$$

or

$$91.25$$

which would take a 12 in. pipe.

As previously stated the valve area method, while simple, is not economical and should not be applied to large installations.

In using the altitude method the size of the radiator

Table IV

Factors for Equivalent Piping

Pipe Size	Factor	Pipe Size	Factor
½ in.	2	2½	110
¾ in.	5	3	175
1 in.	10	3½	260
1¼ in.	20	4	380
1½ in.	30	5	650
2 in.	60	6	1050
		8	2250

runout, riser and main should be based as follows:

For the radiator branch and runout, according to the elevation of the radiator, this being the distance in feet from the middle of the boiler to the middle of the radiator.

For the riser at any particular height as though all the radiation fed by the riser were located at this level where the size is to be determined.

For the main combining the factors for all the risers fed by the main and sizing the main according to the sum of these factors.

For the main riser, same as the main.

Now to apply this to a concrete case, let the system shown in Fig. 2 be made an overhead downfeed system with one second floor radiator (10 sq. ft.) branched from the risers to the attic radiator and the other two

(Continued on Page 156)

Deflection of Pipe Filled with Water

By A. J. PARKS

"All pipe supports and hangers shall have a factor of safety of not less than 12 to 1." Ordinarily, the hanging or supporting of piping is given no thought at all, and often one might suspect that those responsible believe pipe lines will support themselves in some miraculous manner in defiance of the law of gravity.

IN the installation of long lines of horizontal piping it often is desirable to know at what distances apart the supports may be placed to secure two desirable results, viz., the elimination of unnecessary hangers and the avoiding of undue deflection in the pipe. If too many hangers or supports are used, not only is the cost unjustifiably increased but the appearance of the job is also marred; if too few hangers are used, the deflection of the pipe will cause "swells" in the line, accumulation of water in the low portions, possible water hammer and other troubles, which, of course, are much better avoided.

The standard generally accepted by the best design organizations is that pipe hangers and supports should be so placed that, when the pipe is full of water, the deflection should be not more than 1/16 in. out of the true horizontal. The pipe is considered as a simple beam supported at each end by the hanger (see Fig. 1), and when supports are spaced on this basis excellent results have been attained.

For a deflection of 1/16 in. the distances between

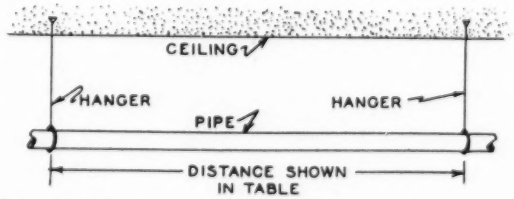


Fig. 1—The pipe is considered as a simple beam supported at each end by the hanger and when supports are spaced on this basis excellent results have been obtained

points of support should not exceed those given in Table I.

Table I

Distance Between Pipe Supports for a Deflection of 1/16 In. (When Pipe Is Full of Water)

Size of Pipe Inches	Distance Between Supports Feet and Inches	Size of Pipe Inches	Distance Between Supports Feet and Inches
1	6 9	4	14 0
1¼	8 3	5	15 0
1½	9 0	6	16 0
2	10 0	8	17 6
2½	11 0	10	19 6
3	12 0	12	21 0
3½	13 0		

In some cases where water pipe is involved and the competition is keen it may be permissible to consider a deflection of ⅛ in. on smaller sizes up to 6 in. Above this the spans become so great as to be liable to introduce an extreme load on the hanger and an undue concentration of load on building construction to which the hanger is attached. Where such deflection is allowable the supports may be spaced as shown in Table II.

Table II

Distance Between Pipe Supports for a Deflection of ⅛ In. (When Pipe Is Full of Water)

Size of Pipe Inches	Distance Between Supports Feet and Inches	Size of Pipe Inches	Distance Between Supports Feet and Inches
1	9 0	3	14 0
1¼	10 0	3½	15 0
1½	10 6	4	15 6
2	12 0	5	18 0
2½	13 0	6	19 6

In all cases it is necessary to have the pipe lengths straight and true before erection, as "bowed" pipe, of course, will interfere with the results shown in the tables. This, however, is true of any scheme which may be used for spacing hangers, and it is assumed in the above that any pipe lengths which require straightening will be properly treated so that they are straight and true before erection.

Supports

Perhaps the most significant thing in the whole field of the larger type of piping is that those who have given the greatest thought and study to the matter of hanging or supporting pipe lines have set up factors of safety on hangers and supports which are probably greater than in any other items in the whole field of building or bridge construction.

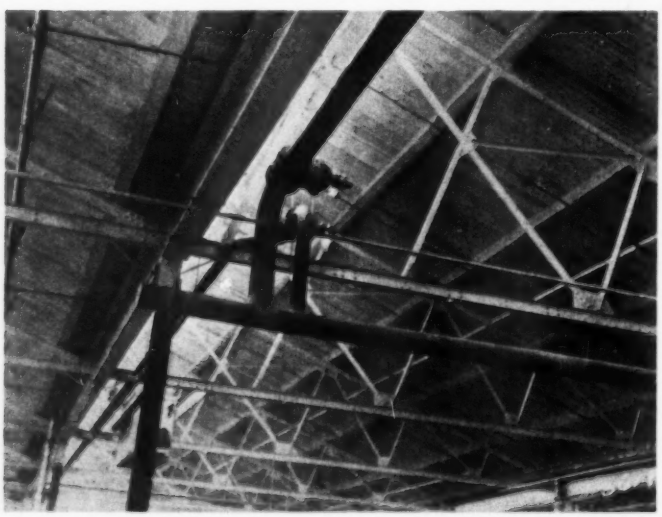


Fig. 2—This illustration shows an 8-in. steam line supported at the end by means of a clamp fastened to the I-beam

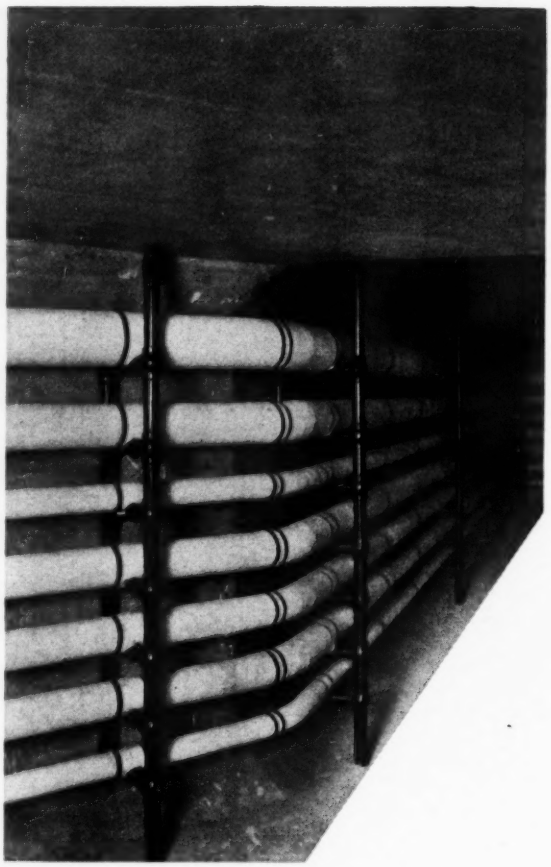


Fig. 3—Piping in a tunnel. In steam and hot water lines, the question of how the insulation can best be worked about the supports is important. In some cases if even this small item is neglected the efficiency of the insulation may be greatly impaired through convection as well as radiation

For example, the Power Piping Society, voicing the experience of practically all the country's largest piping fabricators and contractors for the most important power piping installations, recently included in its standard specifications:—"All pipe supports and hangers shall have a factor of safety of not less than 12 to 1."

It is not strange that it should have done this. The strange thing is that ordinarily the hanging or supporting of piping is given no thought at all. Often one might suspect that as far as adequate specifications on pipe hangers and supports are concerned, the writer of these specifications expected pipe lines to support themselves in some miraculous manner in utter defiance of the immutable law of gravity.

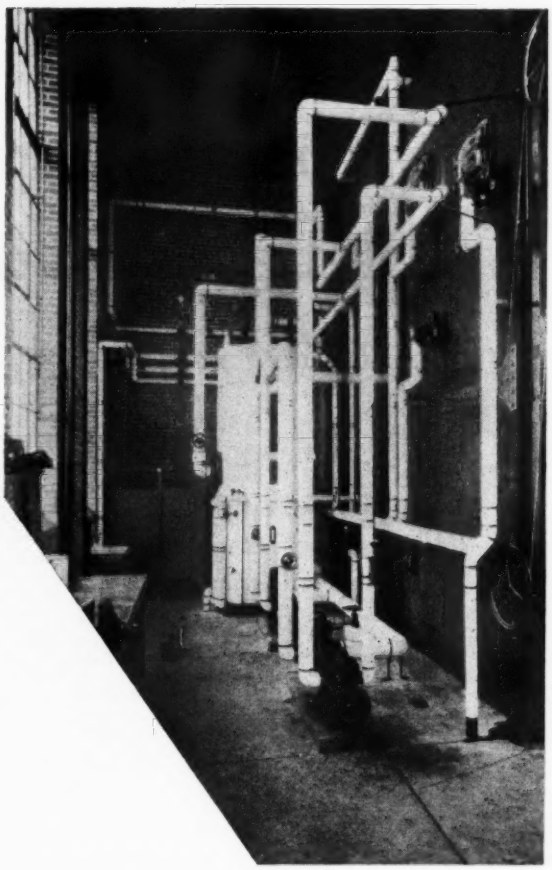


Fig. 4—It is difficult to install piping supports, before the pipe is put in place, so accurately as to levels that each hanger will be doing its part in carrying the total load. Therefore, the most practical solution is to provide means whereby the hangers may be adjusted after installation

Basic Considerations in Designing Hangers for Large Pipes

It is only possible in the space that is left to endeavor to cover briefly the basic governing considerations which must be taken into account in designing hangers for the larger type of piping, and to emphasize the supreme importance of knowing how the piping is to be supported. In training those who have had to do with the design or installation of piping, one of the first, and probably the most oft repeated instruction in the writer's experience, has been:—"Never show a pipe line on a plan until you know how it is going to be supported." If this item is neglected, the chances are that the piping will be installed in an economically wrong position, or when the workmen get around to making the installation it will not be located where planned at all, with consequent "extra" costs for changes, wasted materials and other complications.

There are three basic factors involved in this problem of properly hanging or supporting piping systems: Safety, adjustability and costs.

Safety

The first consideration in the design of supports must necessarily be safety. This involves much more than simply a definite factor of safety to total weight. Supports must be located closely enough to prevent sagging. For steam and other hot lines, the problem of expansion and contraction with ample anchorage provisions must be met. In such cases the piping will probably be insulated and, then, the question of how the insulation can best be worked about the supports is important. If even this small item is neglected the efficiency of the insulation may be greatly impaired through convection as well as radiation.

In nearly every case, safety, as applicable to the supporting of industrial piping, includes consideration of the vibration to which the piping is subjected. The absorption of this may, in extreme cases, require that springs or other devices be embodied into the design. Even under most harmless appearing conditions, however, provision for locking the hangers after installation so that vibration can not slacken off the parts is imperative.

Adjustability

The second basic factor involved in the design of supports for industrial piping is adjustability. A specification which admirably covered this feature was included in the recent proposed Ohio State "Code for Pressure Piping" and read:—"Hangers for pipes larger than 3½-in. shall be capable of screw adjustment after erection." A screw adjustment of some sort will usually provide the best means of properly distributing the load over a number of hangers. It is difficult to install supports before the pipe is put in place so accurately as to levels that each hanger will be doing its part in carrying the total load. Therefore, the most practical solution is to provide means whereby the workmen can adjust these hangers after the piping is in place. It is not

(Continued on Page 120)

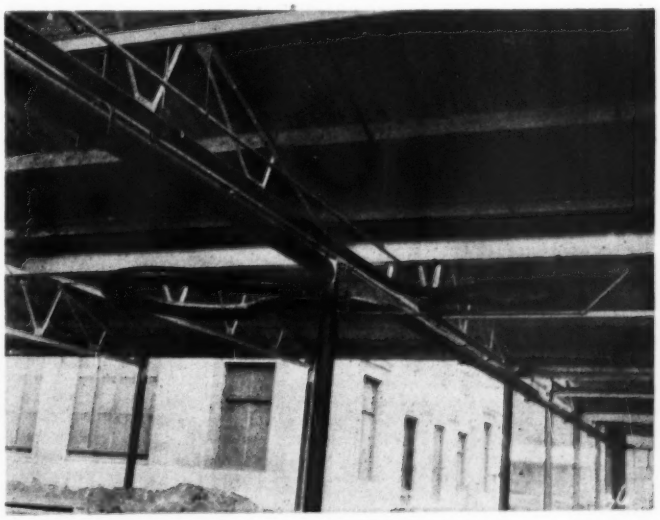
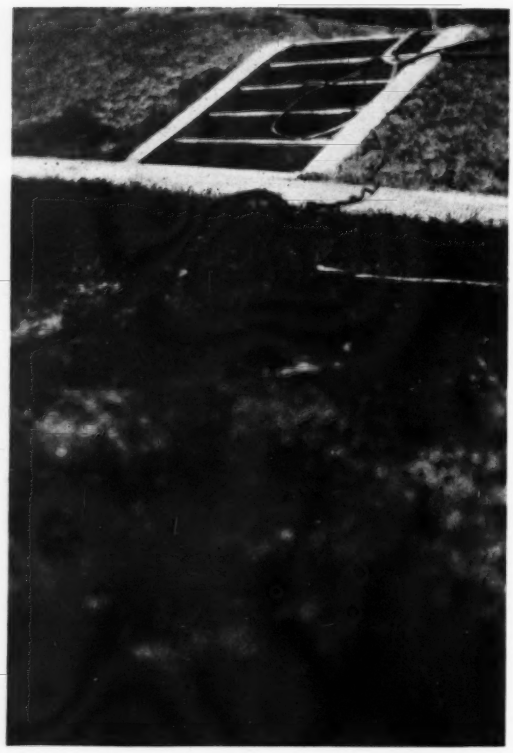


Fig. 5—Expansion bends in a 12-in. line paralleled by a 6-in. line. Note the rollers provided at the supports to take care of expansion movement

Frozen Water Be Quickly Electric



One method of making a connection to the service pipe. The insulation on the conductor is removed and the bare wire is connected to the valve box

Using the method described in this story, the author and one helper thawed from 10 to 15 service pipes per day. The actual thawing time averaged only one to ten minutes. The electric current method is particularly adapted for use on underground pipes

ABOUT this time each year the problem of thawing certain types of frozen water pipes presents itself. This is the thawing of service pipes frozen somewhere between the main and the faucet. When such pipes are exposed, they may be easily thawed with a blowtorch, but the frozen portion is usually covered and therefore is not readily accessible to the blowtorch; also it is not known just where the pipe is frozen. If the pipe is located under pavement there is another trouble to overcome.

Thawing such pipes as mentioned above may be easily done by means of an electric current. In the early spring of 1929 after an unusually long and cold winter, several water works companies of which the writer has knowledge, experienced frozen services. By the use of the electric current method, the author and one helper was able to thaw from ten to fifteen services per day. The actual thawing time averaged from one to ten minutes, the remainder of the time being used in making connections. I was very fortunate in having the co-operation of an electric line-

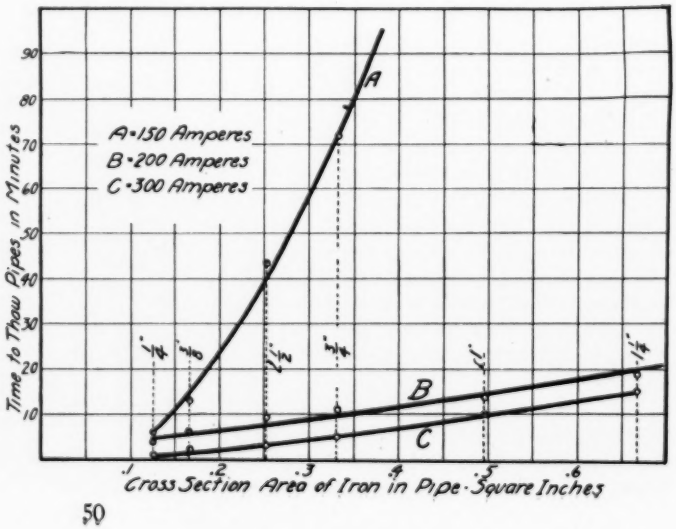
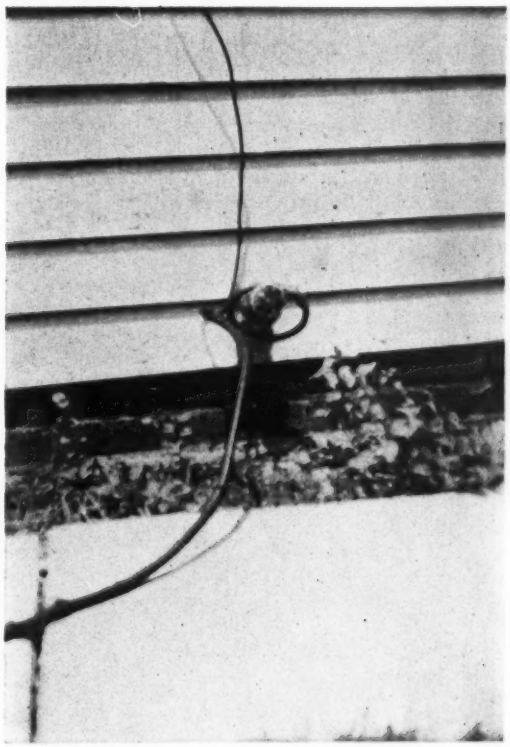


Fig. 1.—If a current of 50 amperes is doubled, or raised to 100 amperes, the amount of heat generated will be increased four times. These curves show the relation between the current in amperes and the thawing time

Pipes Can Thawed With Current

By J. H. BOWMAN

The days are here again when service pipes suddenly freeze up somewhere between the main and the faucet—followed by a hurry call to the master plumber. The master plumber who is properly equipped to take care of this business stands to make for himself a nice profit



This view shows the connection to the frozen water service. One side of the voltage supply may quite often be connected here and the other side to the valve as shown in the photograph on the opposite page

man from the local power company. Usually the power company is glad to help out in a case of this kind. The principle and description of this process will now be outlined.

Principle of Electric Thawing

It is a known fact that an electric current flowing in a conductor will produce heat. This principle is used every day in our electric irons, toasters, stoves, etc. The power that is absorbed by any certain conductor of heat depends upon the product of the current squared and the resistance of the conductor. Or to put this in mathematical form:

(Equation I)

$$P = I^2R$$

where P is power in watts
I is current in amperes
R is resistance in ohms

A water pipe is a fairly good conductor of electricity, in fact, usually much better than the ground

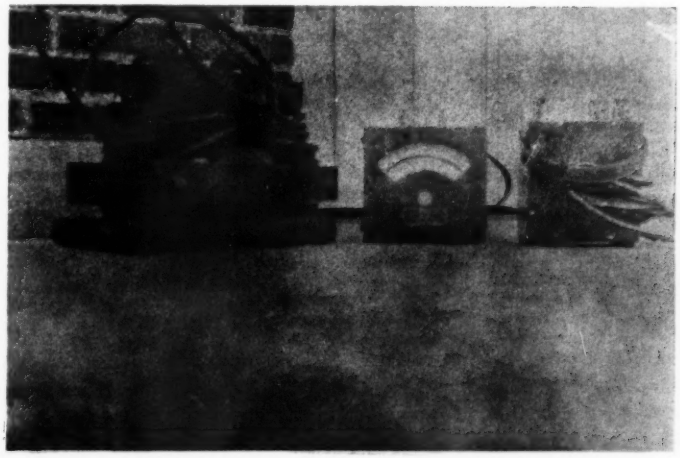


Fig. 2.—The apparatus used in thawing frozen water pipes. From left to right there is shown the choke coil, the ammeter and the current transformer

surrounding it, especially when the ground is frozen. For this reason the current will usually follow the pipe and will not leak off through the ground. If we make use of the above mathematical equation and cause the frozen pipe to carry an electric current, we will have heat produced in the pipe for the same reason we have heat produced in an electric iron. Moreover, heat will be produced at all points along the

A convenient way to obtain a contact with the main is to connect to the fire plug

pipe and will reach the frozen portion without determining the exact point where the pipe is frozen.

The pipe being a fairly good conductor of heat and also being in contact with the cold earth, will naturally conduct away some of the heat that is generated by the electric current. It is therefore necessary to use a large enough current to generate heat faster than it can be dissipated to the ground.

It is evident from Equation I that with the same pipe or with the same resistance to electric flow, the heat produced will depend upon the square of the current. If a certain amount of heat is being produced (not enough to thaw the frozen portion) by a certain current and that current is doubled, the heat produced will be four times as much as before. That is, if the current was 50 amperes and is raised to 100 amperes, the heat will be increased four times. Therefore the larger amount of current used the better and quicker results will be obtained. It would be possible to produce just as much heat by one value of current as is being dissipated to the ground and of course no thawing action would take place. By doubling the current, four times as much heat would be produced and thawing action would probably start. Once the layer of ice next to the pipe is melted sufficiently to permit a flow of water, the remaining plug of ice will be melted by the flowing water thus permitting a saving of time and electrical energy.

For the same kind of material the resistance of a pipe per foot of length depends upon the area of metal in the cross section. A pipe with a cross sectional area of 8 sq. in. would have only one-half the resistance of one with 4 sq. in. Also the larger pipe would have a larger surface exposed to the surrounding earth and hence heat would be conducted away more rapidly than with the smaller pipe. Fig. 1 shows the relation between current and thawing time for the common sizes of pipe.

Apparatus Needed

In order to cause current to flow in a conductor it is necessary to apply a voltage to the pipe. The transformer is probably the most simple piece of apparatus which can be used to give this source of voltage and it may be built with taps to give a variable voltage.

The amount of current which will flow in a conductor depends upon the voltage applied to that conductor and inversely as the impedance of the conductor. Or expressed in mathematical form:

(Equation II)

$$I = E \div Z$$

where I is amperes
E is volts
Z is ohms (apparent resistance or impedance)

The impedance in turn depends upon the kind of metal, length of pipe, cross-sectional area of pipe, and the number and conditions of the points. The average impedance of the most common pipes is shown in Table I.

Table I—Apparent Resistance of Commercial Steel Pipe in Ohms per 100 Ft. of Pipe on Direct Current and 60 Cycles Alternating Current

Size of Pipe (inches)	Direct Current Resistance Ohms	Apparent Resistance to Alternating Current Ohms Impedance		
		100 amps.	200 amps.	300 amps.
¼	.052	.131	.103	.097
⅜	.041	.094	.088	.081
½	.028	.092	.080	.072
¾	.022	.088	.073	.066
1	.013	....	.058	.052
1¼	.009	....	.041	.042

For the following reasons a variable voltage transformer will be best suited for this work:

1. Different currents needed for different sized pipes.
2. High resistance joints.
3. Different lengths of pipe.

There are such transformers on the market at the present time and their greater economy and convenience as compared with other apparatus justify their use where there is a sufficient amount of thawing to justify the investment in special equipment. Some such transformers are made to operate from the house circuits.

It is necessary that the approximate value of cur-

rent flowing be known and for this reason some kind of metering device must be used. Probably the best apparatus for metering is a current transformer with variable ratios from 10/1 to 100/1 and a 5-ampere alternating current ammeter. Precision instruments are not necessary as an approximate value is all that is needed.

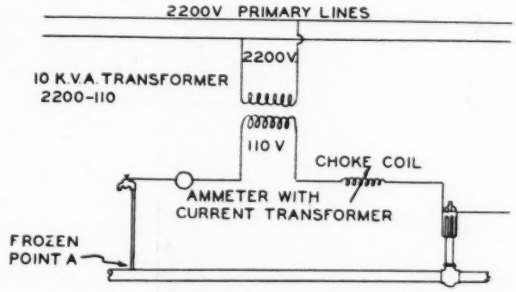


Fig. 3.—A connection diagram for thawing pipes

As seen from Fig. 1 currents will probably range from 50 to 400 amperes. The wires from the transformer to points of contact on the pipes must be large enough to carry these currents. It should be remembered however, that in the winter all apparatus is cold and will be used for such a short period each time that theoretical sizes can be reduced to about one-third to one-fourth. A sufficient length of No. 2 stranded weatherproof copper wire would be suitable for this purpose.

If the cost of such apparatus as outlined in the last two paragraphs is prohibitive, these same principles may be applied through the use of the common power transformer. The following method is the one used by the author the winter of 1928-29.

With a common power transformer the voltage is practically fixed and therefore the current in each case is determined by the impedance (apparent resistance) of the pipe. This impedance is seldom too much but is quite often too small when 110 volts is supplied. Therefore it is necessary to use some means of reducing the current. This might be done by inserting another impedance in series with the pipe but it is seldom we can find the correct value of impedance which will have the ability to carry such high currents without burning up.

Table II—Sample Data from Thawing Iron Pipes

Size of Pipe Inches Nominal Diameter	Length of Pipe in Feet	Amperes Used	Voltage Required	Time Required in Minutes	Kw-Hrs.
½	60	140	130	20	6.1
½	100	110	120	40	6.6
½	120	120	130	15	3.9
½	125	120	120	30	7.2
½	125	125	100	10	2.1
¾	16	20	...	270	1.75
¾	40	300	50	8	2.0
¾	60	350	110	20	11.8
¾	70	300	110	30	16.5
¾	100	150	55	72	16.5
¾	100	135	55	10	1.24
¾	250	400	50	20	3.3
1	100	150	60	20	.....
1	100	150	60	25	.....
1	250	500	50	20	.....
1	250	480	50	15	.....
1	500	200	70	5-60	.....
1	700	175	55	300	.....
1¼	75	175	115	30	10.1
2	30	60	130	30	3.9
½	50				
2	100	150	130	30	9.8
2	30	110	...	...	59.4
4	1300	260	55	180	42.9
6	one block	...	100	60	75.0
6	700	...	...	150	.....
10	800	400	70	120	56.0

Method Used in Thawing

The method used by the author was to wrap several turns of stranded weatherproof wire, large enough to carry the required current, around a laminated steel core made in the form of a hollow square.

The two ends of the wire were then connected in series in the circuit. This has the property of choking down the current and the amount of choking action may be varied by changing the number of turns on the core.

Assume the frozen point to be at part A in Fig. 3. If one isolated house service is frozen it is necessary to make one connection on that branch and another past the frozen place so that the current will flow through the freeze. The other connection could have been made as well to a neighbor's faucet or shut-off valve as to the fire plug.

Table III—Summaries from a Large Number of Thawing Jobs

Size of Pipe	Number of Services	Average Length in Feet	Average Current in Amperes	Average Time in Minutes
½ C	8	33.7	250	19.6
⅝ C	180	36.1	323	8.1
¾ C	55	18.2	350	8.3
1 C	75	40.4	340	14.5
1¼ C	35	40.8	372	9.5
1½ C	12	42.9	360	20.8
2 C	3	52.3	416	13.0
⅝ L	2	32.5	287	7.0
¾ L	53	42.0	341	9.4
1 L	20	57.5	369	29.7
1¼ L	19	61.0	403	26.7
1½ L	8	39.3	393	13.7
2 L	2	45.0	450	40.0
Misc. L	125	....	...	30.0

Note.—L, Lead Pipe.
C, Iron Pipe.

If two adjacent services are frozen it is expedient to thaw both at once by connecting one wire to each faucet. In using this method there is a rare possibility that near the point at which the services tap the main they will be so close together that the current will leak from one to the other without passing through the frozen section.

This thawing was done with a 10 KVA, 2200-110 volt transformer and a choke coil. The normal full load current for this transformer is 91 amperes but due to the fact that the temperature was about 40 deg. Fahr. and that the transformer windings were surrounded by cold oil, it was possible to draw 350 amperes without danger. Quite often it was not necessary to make use of the choke coil.

This transformer was mounted on a truck with a lineman to connect and disconnect it to the 2200 v. electric distribution mains. Two lengths of No. 4

(Continued on Page 154)

"Of extreme importance » » » » » » is the startling fact that 81 per cent of all the modernization installations made have been cash sales!"

▼ ▼ ▼

"We find that there are more than 1,300 contractors who, previous to May 1st of this year, had not, through their own creative efforts, ever sold a modernization job. Each one of these 1,300 contractors has since sold at least five modernization jobs!"

▼ ▼ ▼

"The average modernization job contract price is about $660; 28 per cent of all modernization jobs consist of boiler replacements or the repairing of presently equipped steam heated buildings."

ROLLAND J. HAMILTON

And Now—

Some Facts About Modernization

By

ROLLAND J. HAMILTON

President American Radiator Co.

EVERY major industry, at some time in its history, has passed through a transitional period of distribution and has been confronted with conflicting testimony from its dealer representation concerning the efficacy of the various plans it is promulgating for advancement.

In the heating industry, we have just passed through the first stages of our transitional period; and despite the conflicting testimony of various members of the trade regarding modernization sales plans, we are, for the first time, in possession of actual facts demonstrating the necessity for entirely revamping the sales policies that have been in practice, from the standpoint of the contractor in relation to the consumer, if our industry is to continue to advance.

Heating Equipment is SOLD—Not Bought

First, the past year has taught us that our industry can not afford to be dependent for business upon new construction alone; for new construction has proved to be a seriously variable element and so long as we depend solely or in major part upon it, our heating business will vary accordingly. We *must* cultivate the Old Home Market which, as we know, comprises the vast number of 16,000,000 unradiator heated homes.

Now in the cultivation of this field, definite, irresistible evidence has been presented to us that heating equipment is SOLD and not BOUGHT; and that, individual cases to the contrary, it is the *personal contact that gets the contract!*

Importance of Time Payment Selling

For many years we have advocated the use of the time payment plan as a vehicle for interesting the public in modernizing their homes and other buildings with radiator heat. So definitely convinced were we of the necessity for this sales medium that years ago we formed our own finance corporation; and we have watched it grow to the point where it is now the largest single contributing factor to the present strides being made in modernization selling.

Reflections from the field have demonstrated to us, paradoxical as it may seem, that the use of the time payment plan has aided in the sale of cash jobs. Time and time again, contrctors have been able to gain their customer's attention and eliminated all sales resistance through the easy payment plan, and then closed the sale on a cash basis. And in this connection, the work done by our radio advertising must not be overlooked. It planted the radiator seed as probably no other medium could during the period we have just passed through, preparing the ground for the contractor's personal reaping of the harvest.

As a result of our study of this replacement market and our modernization campaign which began May 1st, we are for the first time in possession of definite statistics showing the type of contractor who has been successful in modernization work; the methods that have met with least and best success; the elements that comprise an average modernization job; in short, statistics of practically every sort which enable us now, for the first time, to answer questions that may be asked by contractors in every type of community, no matter how skeptical they may be.

Some Statistical Modernization Data

It is interesting to note that the average modernization job contract price is about $660; that 28 per cent of all modernization jobs consist of boiler replacements or the repairing of presently equipped steam heated buildings. This is most interesting to note, since it is not alone an indication of the effectiveness of the color and utilitarian appeal of the new jacketed boilers and of our sustained national advertising which has shown how the new boilers permitted the conversion of the old unsightly cellar into a really useful place for work or play; but also because it indicates a widespread appreciation of the advance in the design of boilers, radiators and accessories generally. It shows that the people are becoming increasingly heating conscious, learning that it pays to replace the old with the new!

Of extreme importance to the contractor who has been loath to accept the time payment plan as the salvation of this industry (and of his own business) in its application to modernization jobs, is the startling fact that 81 per cent of all the modernization installations made have been cash sales! Thus is revealed the fact that the great American public has the money today, to buy the much-needed radiator heat, provided that it is told, sold and is satisfied. The time payment plan, we repeat, is frequently the means of gaining the active interest of the prospect and removing his sales resistance by letting him see how easy it is to enjoy the blessings of radiator heating. Having the price resistance removed is in the majority of cases the vital step to the sale.

Reviewing our statistics, we find that there are more than 1,300 contractors who, previous to May 1st of this year, had not, through their own creative efforts, ever sold a modernization job. After listening to the facts presented by our salesmen, studying the "HOW" book and other kindred literature and sales aids, learning how to capitalize on our radio advertising in particular, and then having received their first "taste of blood" in the

(Continued on Page 163)

Editorials

The Association's Job

A RECENT bulletin, issued by one of the progressive associations in our industry, says: "The reason some associations are losing ground is not because they haven't the man-power to do constructive work, but because they haven't a definite plan."

That puts the matter in a straightforward way, without mincing words. There are far too many associations in the country (not only in our own industry) which, pressed for statement of definite plans, would have to admit that they have none. Some of the ridiculous secrecy with which a certain type of association official attempts to surround the affairs of his group is undoubtedly adopted, not because there is anything to hide, but rather because there isn't anything to tell.

When the convention season opens, there will be references again to the troublesome problem of getting members. Most of those who say anything about the matter will indicate the weakness of their position when they are trying to get some one to join. All they can say is "You'll get out of it what you put into it." The representative of a constructive association like the one quoted above will be able to sit down with his prospective member and show him clearly what he will get out of it. Every man has a right to some such statement when he is asked to spend money for anything—why not when he is asked to spend money for membership in an association?

Associations are decidedly not called into existence to provide jobs; nor to take up the time of men of the industry who have their own businesses to look after. They are called into existence to do a lot of things that the individual member can not do for himself. If an association has no plan looking to the improvement of conditions for its members—that "definite plan" spoken of in the bulletin quoted—it wastes money paying for an executive, or it wastes the time of those good members who are prevailed upon to accept office. And all the inducement it will ever have to offer a prospective member will be the old saw: "You'll get out of it just what you put into it."

Tradition — and the Apprentice

A SPEAKER at the Central Supply Association's fall meeting referred to the master plumber as one who had three hundred years of tradition behind him. Tradition is a precious thing. It stabilizes an institution or an industry because in it are embedded the experiences of many men of varied types.

But it is not a thing which is perpetuated automatically. One generation can deflect its course, even shatter it. The carrying on of a good tradition presupposes an interest in the future of the industry. Practically speaking, it means that the master plumber of today has resting on his shoulders the responsibility for the training of the men who will be the master plumbers in the years to come—the apprentices.

Various factors seem to have contributed to a breakdown of the old apprentice system. But whatever the causes, more attention should be paid to the training of the men who will carry on the traditions of the industry. There are too many cities and towns where there is not a single apprentice employed. If the industry does not train apprentices systematically, just how capable will the future master plumbers be?

Holiday Trade

JUST about now retailers in most lines of business — particularly the department store—will begin to call attention to the number of shopping days between now and Christmas, and urging us all to do our gift shopping early.

There has been a gratifying growth, among plumbing and heating contractors in recent years, of interest in pushing the idea of using the products of the industry as gifts.

This year, above all, people will listen to the idea of gifts that have a lasting and useful value. Get your Christmas sales windows and ideas ready to win a bigger share of the Christmas gift money.

In Restraint of Trade

THERE are more ways of being "in restraint of trade" than are mentioned in the anti-trust laws. In fact, it is quite possible that conservatism that amounts to stagnation is responsible for restraining trade to a greater degree than the wicked machinations of financiers.

Let a new idea be suggested, and observe the instantaneous opposition to it, on no better ground than that it is new. Take, for example, the idea of selling plumbing and heating on time payments. There has been much opposition to this idea—and the peculiar fact is that some of the opposition arose without any semblance of investigation, or willingness to listen and analyze the reasons advanced in its favor. How far those opposing it have been from the facts, and for that matter those who proposed it, is interestingly illustrated by actual records which show that, where the plan has been used as a selling aid, more than eighty per cent of the sales were for cash!

The councils of the industry ought to value conservatism, but nothing should be condemned or upheld merely because it is new, or because it is old. Business judgment and a desire for facts are required.

PLUMBING & HEATING MERCHANDISING

$500,000,000!

is spent every year for maintenance and repairs by America's home owners according to the President's new Conference on Home Building and Ownership

Here's what plumbing and heating contractors are doing to secure their share by

Merchandising for Remodeling

NOTHING is so heartening in the industry today as the signs on every hand of a willingness on the part of the retailer to adapt himself to new conditions. As business is organized at present, merchandising is the most essential duty which rests on the shoulders of the men who form the last link in the chain of distribution. Without merchandising we cannot hope to compete for a share of the consumer's expenditure. An increasing number of contractors are striving to develop more contacts with home owners and it is unquestionably true that the volume of plumbing and heating sales for repair and remodeling is growing as a result of this effort.

Not only is this true, but contractors are taking a greater interest in the sale of specialties. In these cases, there is a mutually profitable relationship between the regular run of plumbing and heating products and the specialties, each creating opportunities for contact with prospects, and for sales of the other class of merchandise. In this feature section are examples of what plumbing and heating contractors are doing to create business in the older homes.

A Strong Circular

Reproduced on the next page is one fine example of this type of merchandising. W. H. Picard, of Oakland, Calif., is noted for his consistent, intensive merchandising, of a type that would be a credit to any industry. The reproduction is of one page in a fold-over circular which has to do with remodeling the heating

plant. Pictures are shown of what is really a very good-looking furnace installation, in which the pipes are shown to take up a great deal of room. Alongside of it is a picture of a basement with a boiler in it, showing ample area for many activities. The copy says: "Transform your cellar, with its clutter of hot air pipes, into an attractive room by installing new modern automatic heating equipment."

The entire inside sheet is striking in layout. At the head the question is asked: "Why not enjoy the comforts of a modern and perfect heating system in your home? It costs less." Three views, a living room, a dining room and a bathroom, with concealed radiation, accompany copy which stresses the thought that here is no waste space. A single line invites the reader to "Modernize Your Home with a Picard Heating System" and gives explanatory copy. Below, the copy touches on gas and oil heating, and calls attention further to the "easy time payment plan" offered by the company. In the corner is a brief piece of copy calling attention to "Picard Repair Service." The copy on the back page is that which is reproduced and which is intended to ease the prospect's mind by indicating that the company takes over all the details of a remodeling job.

This circular, produced by a contracting firm, would shame no manufacturer. It is one of a constant stream of advertising literature sent out by this progressive retailer to develop sales of remodeling jobs.

COMPLETE
REMODELING
SERVICE with....
UNDIVIDED
RESPONSIBILITY
Every detail, including the carpentry, electrical work, plastering, tiling, painting, decorating, and plumbing is under our exclusive supervision, thus eliminating time, worry, and expense for you. W. H. PICARD, Inc. stands squarely behind every job, whether it calls for minor repairs or an elaborate remodeling scheme.

He Uses Repair Jobs to Build More Sales

"NEVER, not even for a single day, since going into the plumbing business in 1910, have we neglected the repair side of things. We felt at first, as we feel with greater intensity now, that the rank and file of plumbing house and plumbing shop proprietors should, positively, build up and maintain a progressive repair department," says H. J. Ebling, president of the plumbing firm which bears his name in Kenmore, N. Y.

"Almost two decades of experience in a rapidly-growing town, doing both contract and repair work simultaneously proves to us that the latter is the best advertisement for the former, that the ability and efficiency with which repair work is executed constitutes 'copy' that cannot be beaten. Then, too, repair work of itself is profitable. It is a distinct business in its own right.

"Plumbing repairs are our bread and butter—and 'jam.' We use our repair department to cover the butter on the bread with jam."

« «

"There is no gamble connected with a modern repair department."

« «

"Repair work is the best advertising for new work."

Repair Work Is Important

"We are doing a repair business of some $25,000 to $30,000 a year. This is about one-seventh of our total business. Last year our contract work amounted to slightly better than $150,000, or a total business of some $180,000 worth of plumbing and heating. I mention these figures merely to show the relation of repair work to the larger contract work.

"The truth is, our repair work, now and for the past several years, is an outgrowth of the contracts we've executed since being in business. And much of our present contract work is, in turn, the outgrowth of repairs, plumbing and heating, that have been done satisfactorily.

"A little history will perhaps clear up things. In 1910 we purchased a small plumbing business here in Kenmore. It was the only plumbing shop in the village of some one thousand people. In 1913 we added hardware. Three years later, in 1916, we built our present store and shop, a present investment of some $200,000, ten street numbers up the 'avenue' from our former headquarters.

"In 1919 the 'boom' started. Houses were going up right and left. For four straight years, 1,000 homes a year were erected in this town of ours, whose principal street is Buffalo's main avenue, extending into our village because of the happy location of our town and because of its close proximity to Buffalo.

"We, the Ebling plumbing firm, were in on the ground floor. There was no other plumber located in Kenmore and we just naturally got the work. For one builder alone we did the plumbing and heating of 125 homes. In 1910 we did $15,000 worth of business, two of us and a helper.

Our average job was $250. Now our average contract runs some $550, but we make less money in proportion to 1910 costs, etc.

"Our largest job ran $45,000, plumbing and heating the Kenmore high school. We did many other fairly large jobs such as this here in Kenmore, and in Buffalo, but the great majority of our work lay in the home and apartment field. As I just mentioned, we were in on the ground floor and got the work. Because we were the only plumbing house here in the immediate vicinity we got first trial. We *continued* to work for the same builders because we gave the best we had.

Don't Depend on Reputation Alone

"But we don't bank on past *contract* work to keep our public sold on us when it comes to repairs. It is true, as I've mentioned before, that much of our repair business is the outgrowth of our contract work. But just as much, or more, of our present repair business is due to our system of handling repairs and repair customers.

"A past reputation, no matter how excellent, will never continue a firm on the profitable plumbing highway, if it does not handle each repair job in an A-1 manner. We are sticklers for details. At least we try to be very particular. Each detail, each portion of each repair job, must fit into the complete and well-done whole. A customer must be thoroughly satisfied.

"Our system of getting and taking care of repair business is nothing startling. As mentioned before, a good share of repairs are obtained by customers calling the store, or dropping in in person because we did their original plumbing, or because we are Kenmore's original plumbing establishment and should be A-1 due to our successful survival. Another good share of our repair business comes as a result of word-of-mouth advertising. Do a good plumbing job and the man and woman of the house tell all their friends about it. At least many of their close acquaintances see the plumbing in their home.

"Then, two and three times a month, we advertise our plumbing facilities in the local weekly. Our ads, simple and unpretentious, carry a straightforward message to the housewife and to her lord and master. They *suggest* good plumbing in the place of *old*, or nothing at all, AND the repairing of the broken-down and leaky. We find that even a small, *insignificant* reminder, from time to time, brings us a lot of business that would otherwise remain as is—*plumbing in need of repair*. A small consistent repair advertisement cannot help but make people *repair* conscious.

Finds Advertising Necessary

"Plumbers in small towns and villages would do a much better repair and general business, we feel, by using their local weekly consistently and in all seasons. Most plumbers are content to handle only the repair work that *comes in*. We are not. We want the maximum business, yet *not too much* to make us less efficient on each job. We take all the repair work we can get, but accept only that which can be done within the specified time and by using only A-1 materials.

"We draw the line on inferior merchandise. We will not put it to use. We give our clientele the best at all times. Many repair jobs of considerable money value have been thrown into the discard because we didn't care to install parts that we felt inferior. Here in Kenmore, here in our store, we have set up a working code. It is an unwritten code but it is known by each and every employe. If printed it might read as follows:

> Whether the job is a $2 one or whether the amount is $100,000, always give the customer the *best*.

"Then we use window displays to good advantage. We try and have one of our two front windows given over to plumbing at least one whole week every month. We are on the main street. Hundreds pass our store daily. And so we pay as much attention to our plumbing display as we do to other types of windows.

"It is hard, as we all know, to state with any accuracy the business that a single window display brings a plumber. But we have a mighty

This is a "selling" window that attracts customers into the store

good idea just how much he'd lose if he had no window at all. We are strong advocates of modern plumbing *merchandising*. We feel that plumbing and plumbing service can be sold just like any other product.

Repair Department Profitable

"We believe that the repair division of a plumbing business may be classed as a service, and a profitable one at that. And thus, by taking care of this service, we are building up our general plumbing reputation. When a woman wants a new sink, or a new bathroom, or what not, she is most apt to call on us because we have paved the way for her trade by the way our repair service was handled.

"One man is at the head of our repair division. He is responsible to me personally for all repairs. We have chosen him not only for his mechanical ability but for his tact. A man must have a true knowledge of human nature to successfully make any and all repairs in any and all types of homes. He runs into many and varied personalities over any thirty-days' period. Yet it is his job to please them all.

"We charge the customary $2 an hour for repair work. This charge commences when the repair man leaves the store for the job in question and ends when he returns. We employ a punch-clock system on all repair work to extremely good advantage. It is a system that has saved us dozens of disputes, and undoubtedly plenty of money, since inaugurating it two years ago. Each job is numbered on a yellow card. On it is the name of the customer, the type of work to be done and the name of the workman. When the repair man leaves the store he punches it, and goes through the same process when he returns. The card then tells, authoritatively, just how much time was consumed on each repair job. It tells us just what to charge the customer.

"We don't try to 'get all we can' out of our customer public. Answering a call, if the repair man finds that he can make the repair in much less than an hour's time, he informs the housewife of this fact. He tells her of our minimum hour charge and asks her if there isn't something else he can see to. This is service, we feel.

"Our policy is to take care of all repairs within twenty-four hours if it is at all humanly possible. Speed is essential to plumbing repair success. When a woman wants a faucet fixed, she wants it done pronto.

"We have made it a strict practice to settle no disputes arising over prices or workmanship over the phone. We try to have the complainant come to the store and visit me in my private office. Face to face things can be ironed out smoothly and to the customer's satisfaction. The public does not know that we keep such accurate data on all jobs, so if a customer, for instance, tells us that our man did not spend such-and-such amount of time repairing her faucet, we merely produce the punched card and show her the facts in cold figures.

"I make it a point to attend to all disputes myself. When anyone makes a complaint I ask the party to come in and see me. In the meanwhile I ascertain all the facts pertinent to the complaint *and complainant* and the job in question from the one who actually did the work. I am thus fortified, together with the file of job cards, and can meet the situation with comparative ease and assurance.

"Practically 90 per cent of our repair work is done on a charge basis. Last year we did a $2,200 cash repair business. We know our customer public for we make it a part of our total business to know those with whom we do business.

"Losses in repair work? Our loss in 1928 was approximately 1 per cent, while our losses in contract work ran in the neighborhood of 4 per cent. These contract losses were high due to many factors that seemed to be beyond our control, principally due to depreciation of real estate values.

They Merchandise

These are the trucks of the B & D Plumbing Co., 1709 E. Florence Ave., Los Angeles, Calif. The members of this firm have made an intensive study of merchandising methods. Their service trucks are fine to look at, and the men do their work in white duck uniforms. One member of the firm maintains contacts with customers and prospects by personal calls, assuring a steady flow of repair and remodeling orders. They offer a convenient time payment plan on plumbing jobs, as well as on specialties handled. Their location is one chosen for its splendid merchandising possibilities.

"Plumbing repairs are our 'bread and butter'—and 'jam'. We use our repair department to bring us a nice steady income, a profitable one. And we use our repair department to cover the butter on the bread with jam, in the shape of bigger business, contract business. Which it does.

"Builders come and builders go. Contract jobs for the average plumber are more or less of a gamble. But there is no gamble connected with a *modern* repair department, provided the plumber will merchandise this department as successful merchants in other lines of businesses sell their wares."

A corner display window, with prominent sign arrangements

Modernizing Specialties Bring Business to Plumbing and Heating Contractors

REMODELING—or modernization as some prefer to call it—offers many opportunities to the plumbing and heating contractor aside from the sale of plumbing and heating equipment. These, and the need for service to them, get him into the home, where he has an opportunity to suggest such specialties as he may handle. Then, too, the merchandising of the specialties themselves brings in to him business of a profitable nature and opens opportunity for the sale of plumbing and heating equipment. The following examples will indicate just how some contractors are going after this specialty business.

H. E. Mueller of Canton, Ohio, traded his coal bucket for an automatic stoker, and found the door open to a new field which in the last two years has been very profitable.

Automatic Stoker Brings Sales

Mr. Mueller was attracted by advertisements that coal stokers are more economical than furnaces fired by hand. It sounded good, yet it seemed impossible. There was one way to find out, so Mr. Mueller bought a stoker and installed it in the basement of his shop.

Mr. Mueller had figures showing the cost of firing the furnace by hand. It cost him in the neighborhood of $17.50 every two weeks. With the stoker, his coal bill dropped to about $7.50.

Automatic heating was not a new venture for Mr. Mueller. He had handled gas and oil heating units for some time, and had found these systems very satisfactory. But the coal stoker was a new venture. In fact, it was a new product whereby coal for the first time had been placed on the same automatic basis as gas and oil for the average home and building owner.

Mr. Mueller took the agency for the stoker and has made a number of installations in his territory. At present, he is looking forward to fulfilling his quota of this year.

With only two salesmen and himself dividing their time between coal stokers and hot water heaters, this is a big task. But it is being tackled by men who know the power of economy in a sales talk. It is through stressing economy of operation that they are making such rapid strides in the field.

How the Salesmen Work

In approaching a customer, it is not the cost of the installation that is featured by these salesmen. They know that a very moderately priced article will not sell by price alone.

There are two great factors favoring them. First they stress the economy. From actual figures of tests made in the Mueller building, and from figures they have secured from their many satisfied customers, these men guarantee a saving over the cost of hand firing. Their second strong talking point is the convenience. They show how the stoker automatically keeps the room at the proper temperature all day long and how the constant shoveling of coal is eliminated.

These personal visits with the prospective customer are augmented by literature mailed by the manufacturer at the request of Mr. Mueller, the national advertising in both newspapers and magazines done by the makers of the stokers and the local newspaper advertising done by Mr. Mueller.

There are many ways for Mr. Mueller to get prospects. First, there are the building permits. These are watched closely at the city hall, and when a permit is secured, an effort is made to interest the builder in an automatically operated coal boiler.

Other tips come from architects

of the city. There are only a few architects in Canton, but these men have furnished some nice tips which were later developed by Mr. Mueller and his aides.

Working with Architects

The architects are furnished data on home heating which show how economy in fuel bills can be secured through the use of the stoker. This information acts in two ways. It not only aids the Mueller organization, but it impresses upon the home owner that the architect he has retained is jealously guarding his future heating bills by suggesting a more economical method of firing the boiler.

The third source of tips is the satisfied customer. The H. E. Mueller company is not satisfied with the transaction when the stoker is installed. The officials want to know how it is operating. As a result, they keep in touch with the new owner and from him secure data on fuel costs which he is glad to furnish. These are used for future sales. In talking with the owner of a new stoker, the company representative often secures tips of others who would be interested in automatic coal burners. Besides these tips, there are the favorable comments of one home owner to another when home heating is discussed, and in this way, the stoker is often highly praised and recommended.

Mr. Mueller does not confine his activities to homes, but goes after the larger commercial jobs. He installed a coal stoker in one of the city's leading stores which resulted in a saving of $2,400 a year, and gave plenty of heat, which store officials declared they were unable to get under the former system.

Only recently, the H. E. Mueller company installed a coal stoker in the city's newest bank. A stoker has been installed in the office building of one of the largest manufacturing plants in the city, another in one of the downtown office buildings and one in the city's most important recreational center.

"We have found the coal stoker a very profitable item," Mr. Mueller declared. "Installations in commercial buildings run about $1,200 to $1,500 each."

Sells Gas Radiators in Carloads

AS SOON as one begins to get into the South there is a tendency for people to insist upon the sufficiency of the climate at all times to keep them in comfort. But the Tennessee Plumbing Co., 145 S. Third St., Memphis, under the guidance of Gus Limberg, realizing that there are times when the home owner would appreciate something convenient in the way of heating arrangements, took on the sale of a gas radiator and has developed a highly efficient sales technique.

Here is what the manufacturing executive, who is in close touch with all that Mr. Limberg has been doing, says about his work: "In his first year he sold two carloads, equivalent to approximately $22,000 retail. This dealer is ahead of his sales of last year at this date, and he expects to sell at least four carloads, despite the great depression in all kinds of construction in Memphis."

In the first place, Mr. Limberg has been an enthusiastic user of the direct mail literature which the manufacturer furnishes. He has coupled these messages with newspaper advertising which stresses the convenience of this specialty.

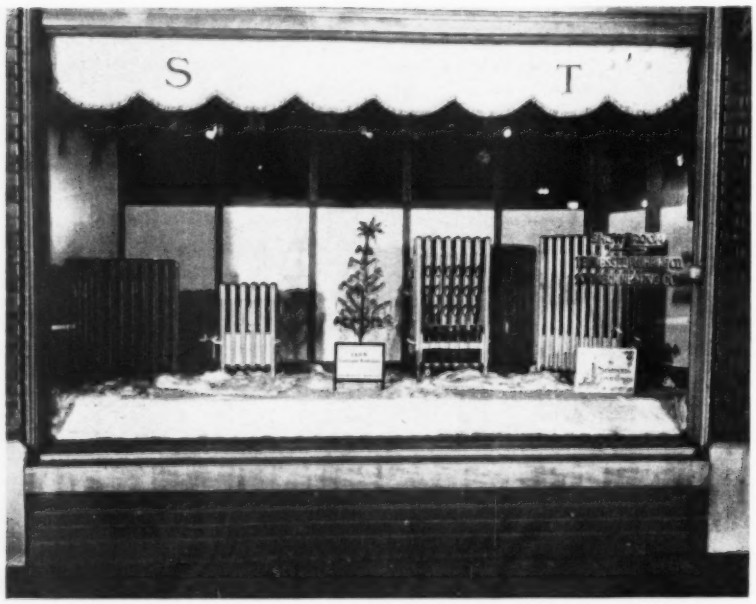
With the advertising working up interest in the product, Mr. Limberg took on three people to make a house to house canvass. Now he has a salesman, working on a salary and commission basis, to follow up the leads developed by the advertising and the canvass.

Time Payment Plan Helps

In order to assist the selling process, Mr. Limberg offers a convenient time payment plan. The individual sale is, of course, small in amount, and the paper is handled by Limberg himself. But the fact that he can offer this convenience to his prospects helps to break down sales resistance and adds something to the total volume of his sales.

About ninety per cent of his sales are made in August, September and October, acting as a stabilizer to the sales line. When he took on the gas radiator, he had a factory man come down to Memphis so that he and his men would understand thoroughly all of the problems involved in figuring the radiation and in making correct installations. Mr. Limberg checks every job after installation to make sure that it is working properly. He will go to any lengths to assure his customer satisfaction.

Mr. Limberg's activities with this specialty indicate one of the developments in which contractors have been indulging in the last few years. Combining proper specialties with the regular run of plumbing and heating gives him an opportunity to develop sales of each type from calls for other type of merchandise or service.



A typical holiday window that played its part in selling gas radiators in carload lots

Objections—and How to Meet Them

WHAT is an "objection" in a sales interview? Probably it is best described as "resistance." Because customers are being persuaded to do something they had not previously decided they would do, they object. An objection may be raised at any stage of an interview from any viewpoint or angle, but it is generally most dangerous when raised at the points of price discussion or closing. Because it is the psychological moment of the interview, the salesman is most likely inclined to experience some mental tension when he should be most at his ease. When an interview has been carried successfully through the approach and interest, and the desire to buy aroused to that extent where the customer is curious about the cost, the sale is almost closed.

If a customer has exhibited willing interest in all the salesman has had to say, accepted his introduction, listened to his explanation of the object of the call, approvingly accepted his recital of the reputation of his company and product, finally permitting him to begin closing in and narrowing the topic of conversation to the actual order, and then unexpectedly offers some objection, it means that the customer has begun to weaken very seriously. He is seeking an avenue of escape before he is finally influenced into making a decision.

The Hidden Objection

Having carried on so far, he has implied, if not spoken his approval, but the hidden reason for not buying may creep into the situation because of lack of ready money, a question of value, a doubt about the appropriateness of the merchandise or material suggested; or he is not fully convinced of the necessity of the service or convenience.

The manner of meeting an objection must be quickly determined; generally there is little opportunity for advance planning. Therefore, it is well to have some general basis for that quick decision.

As we have stated, the objection is only the expression of resistance; behind it lies the unexplained, the hidden, the real reason. To prove this, if the customer were thoroughly sold on the value he would receive, he could find no fault with price; so, when he complains that the price is too high, the salesman has need of only one rule by which to decide his course of action. The customer has a doubt in his mind of the value represented, or he is fencing for time to decide whether or not he can afford the investment.

If the past history of the case indicates that the customer is sufficiently strong financially, then a comparison of values must be set up to complete his confidence so that he will agree with the salesman on the worth of what he is to get for his money. This comparison of values must be set up tactfully.

If appropriateness in selection is questioned, it can be a matter of taste or doubt of the result in value after making the investment; the money cost rarely enters into the problem under these circumstances. The preferences of the customer have been insufficiently analyzed and the salesman should lead him into freely discussing just what he dislikes, get some idea of what he thinks his preference would be, and build his suggestions around that information.

When the customer doesn't think the new equipment is necessary and worth the expense, against what he already has, there is no hidden reason in that argument. After submitting to the advances made by the salesman through the entire program of the "sale" and offering this objection at the point of closing, the customer squarely indicates that he has been unconvinced throughout the entire interview. Perhaps the salesman hasn't noticed it, probably he was doing too much of the talking and must set himself back to building up interest and desire all over again. The customer is not ready to close under these conditions. The manner of getting back to the right starting point is by questioning the customer, getting him to tell all his reasons for his opinion, and then introducing some of his preferences, using them as bait to make him talk more of his own ideas.

The objection is only the result of some part in the salesman's work that has been improperly or insufficiently done, and the moment it comes up is the signal for a fast inventory of what transpired up to the point of the objection; then a decision as to how to make the customer talk enough to learn the real cause. When the real cause is located the road to the order is again open.

Working Toward a Sale

Not long ago, I had the opportunity to stand by and listen to both sides of a selling interview, in which the contractor had had several previous conferences with a customer over the proposition of a completely new installation of plumbing and heating in an old property. The house had been built thirty-five or forty years before and had a hot air furnace. Except for a new sink in the kitchen, the plumbing was just as it had been installed. The contractor had worked up the idea with his customer, that a renovation of these obsolete fixtures and heating plant would improve the value of the property and make it more desirable as an investment for renting. He had reached the point of trying to close, and when price was discussed the customer hedged on the cost, claiming the property as it stood did not warrant the investment. When the contractor answered with sound reasons why it did, the customer, still unconvinced, forced the contractor to back-trail and rebuild his whole structure.

The contractor was evidently pre-

▲

The Master Salesman shows how to handle the objections that may be offered during a sales call.

▼

pared for this attitude. He wasn't a second in answering:

"I wish you had the time to drive around with me a bit," he said. "I can show you homes by the score, where the builder and architects have made every possible effort to duplicate the very style and finish you have in that house. They have even gone so far, in many places, as to duplicate aged or weathered millwork, even stone used on exterior decorations has been acid-treated to make it look weathered; all done to create a finished effect of one of the fine old colonial styles you read about and only see once in awhile. You don't have to do a thing to the exterior of the house or the grounds to get your colonial effect. The house sets back from the road, is approached by a semi-circular drive, the lawn is perfect with its hedges and fine old trees. Then there is the wide veranda covering the whole front of the building, with its heavy columns supporting the veranda roof. You couldn't have a more complete picture from the roadside. A little paint, possibly, yes. But when you get inside, the open fireplace and colonial stair in the living room complete the picture except that those hot air registers are not in keeping with the period the house represents. That is why I suggested the hot water system with concealed radiation. With the fireplace burning in the fall or winter, and the room actually heated by hidden radiation—what is your conception of the effect—pretty near the real thing, don't you think?"

"I know all that," interrupted the prospect, "all you say about beautifying the place and making it one of the 'fine old homes' of the neighborhood, but it costs too much money."

"If the cost is not an investment for profit," answered the contractor, "then I would not advise you to make these changes. But on each side of you are properties that are worth $50,000 to $75,000, aren't they? And they are semi-colonial, too. They have neither the timber nor construction quality your house has. Put the modern effects in your house that they have in their homes, and if you bring your house up to the style of theirs, it should equal their value, shouldn't it?"

"Well," said the prospect, "even if I go ahead with this alteration, I don't see why we should use concealed radiation. We'd have to tear out and rebuild those window casings, for instance. That would cost extra. The concealed radiators cost more than the other style, too."

"Yes, I know they cost more, and that you'd have to rebuild the window casings and put in window seats to take care of the radiators. But is it consistent to have a colonial living room, a real open fireplace, and the ordinary type of floor radiators put out in full view as a disillusion to the eye in the effect you're trying to create. It is the same in your kitchen and bathrooms. The plumbing is neither fitted to the 'colonial' type, nor is it up to date. You have ninety per cent of better lines, layout and effect than either of your neighbors. All you need is a little touch up here and there, to put twenty-five thousand dollars added value to that property. And don't forget, you agreed that as it stands it isn't worth much more than the value of the ground itself."

Getting at the Prospect's Idea

Now, the contractor knew that this owner had given some consideration to moving into this property and making it his residence. He also knew he had gone so far as to have plans drawn for an entirely new building. So that, while he was talking value and investment, he had in mind the awakening of this dormant idea. He suspected, or at least hoped, that when the owner got a real vivid picture of what that property would look like when finished, he would pass up the idea of renting or selling, and take it for his own home. If he got him to thinking that way, the owner was financially able to spend any amount he desired, to have what he wanted. In this the contractor was playing to use the preferences of the owner.

It was clearly a case of an undeveloped reason why the customer should accept his plan. Had the contractor tried to force the value of the improvement as an asset to the property with no other reason behind it, the owner as he later stated would not have been interested, since the value at the time would show a profit if the property were sold. But the contractor was merely establishing value by comparison with adjoining property, to be able to bring out his real objective.

Finally, the contractor said: "Did you ever think of taking that property and remodeling it for yourself? You know, it would have no equal in that neighborhood if you got in there and made of it what it can be."

"Yes," replied the prospect, "I had thought of it several times. In fact, I had intended pulling that house down and building a residence for myself. But when I found it would cost me between $60,000 and $70,000 to build what I want, I gave up the idea."

"Well, I'd think it over again if I were you," said the contractor. "You can make all the improvements necessary to create an ideal home for less than $10,000, and taking the value of $35,000 you estimate, it would cost you only $45,000; and you'd have a better built home and one equally or more beautiful than either of your neighbors."

"Suppose we think along those lines. What is your idea of the layout in that dining-room? Where those two bay windows are, have you thought of casing those for seats?"

Abbreviating the details, the contractor began questioning the owner on different points in the plan of the building; and in less than half an hour the owner was on the 'phone, discussing some of those points with his wife. Later she was to meet both of them on the premises and go over matters more fully. When the customer left, he made the remark: "I'd never make that alteration under any other condition than using the property for my home. But I guess you're right; I have a value in the building I had not thought of before."

Another angle which fits times of "business depression." A contractor had pointed out the need of more complete washrooms in the factory of one of his clients, and got for his answer, "Times are too hard now to make improvements, although I'll admit we should have the changes made. But we can't afford it now."

The contractor didn't try to urge a change of mind, but went quietly about the task of studying what was needed, and figuring carefully the cost of the remodeled washrooms. Then he had them dig up prices of materials of several years back, in a time when business was good. There proved to be a saving of 38 per cent in the cost over prices at the moment. Armed with these figures for comparison, he called on his client

(Continued on Page 128)

New Problems Are Met When Connecting Water Closets At Three Different Levels

This is the first of two articles on this subject by S. M. BARR

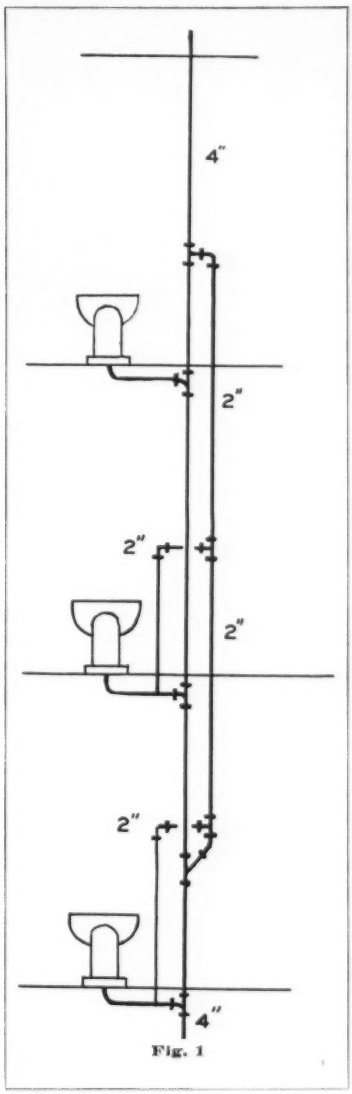


Fig. 1

SEVERAL months ago there were published in DOMESTIC ENGINEERING two articles on the subject of the connection of water closets into stacks at two different levels.

Those articles were suggested by a discussion of the subject in a convention of plumbing inspectors in one of the Middle Western states. The study of the subject brought out a surprising amount of interesting information. It suggested to us a study of the problems involved in connecting into a stack water closets on three different levels, and here again we have been surprised at the variations that our study of the subject has uncovered.

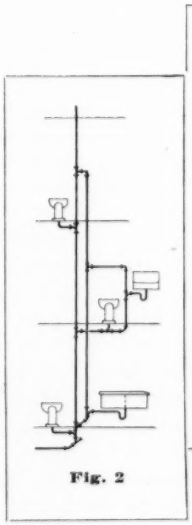


Fig. 2

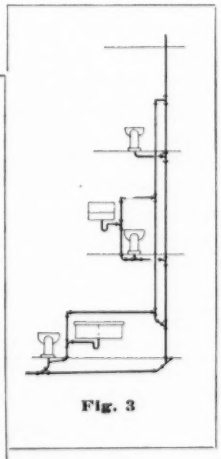


Fig. 3

If such articles had been written a number of years back, probably it would have been impossible to learn of many of the combinations that we are able to present, but the present-day employment of pilot drawings presents graphically much information on such a subject as this, which the printed plumbing code does not present at all, or in such a way that the facts do not stand out clearly.

Probably the technical subject having the greatest bearing on the connecting of water closets into a stack from three different levels, is that of the flow of water down vertical stacks. This in turn leads directly to the consideration of siphonage and of course when siphonage comes into the plumbing picture, that means that we have to apply venting as the remedy. Therefore, we find that the chief con-

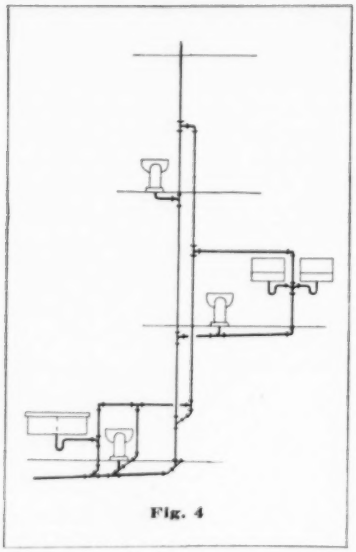


Fig. 4

sideration in the study that we have made is that of venting.

Creating a Vacuum

It is quite an undertaking to create a vacuum or even a partial vacuum on a 2-in. pipe; it is a harder job to do this with a 3-in. pipe, and a still harder job with a 4-in. pipe. There are many who are ready to stand up and testify that it cannot be done on a 4-in. stack. However, it is a fact that during the exhaustive series of tests made by the Bureau of Standards at Washington, it was conclusively shown that in order to produce a vacuum sufficiently great to siphon a water closet trap, it was not necessary that the stack, to which the fixture was attached, should run full.

Flow of Water in Stacks

On page 104 of the Hoover report, and under the heading, "Characteristics of Flow of Water in Partially Filled Vertical Pipes," appears the following, which bears on this subject:

"The character of the flow of water in a partially filled vertical pipe varies with the extent to which the pipe is filled. Limited opportunity for direct observation of the flow was offered in the experimental work. Opportunity was given to observe the flow past glass sections set near the point of entrance and near the base of the stack, the flow from the open lower end of a vertical stack, and in a few cases through the stack itself. For small volumes of flow amounting to little more than a trickle, the flow is entirely on the inner wall of the stack. With increase in volume the adherence of the flow to the wall continues up to the point where the frictional resistance of the air causes it to diaphragm across the pipe, temporarily forming a short slug of water which descends as a slug filling the stack, until increased air pressure breaks through, the water forming the slug either being thrown again to the wall or falling for a short distance as separate streamlets in the center of the pipe. This diaphragming and forming of slugs probably first appears in a 3-in. stack when the stack is one-fourth to one-third full. As the volume of flow increases, the slugs thus formed are more frequent and more persistent, and in a stack open at the lower end may not be broken through. This intermittent rate partially accounts for the rapid erratic oscillations of pressure in a plumbing system.

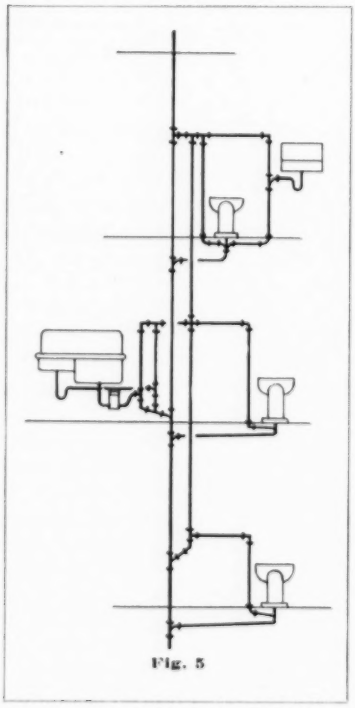


Fig. 5

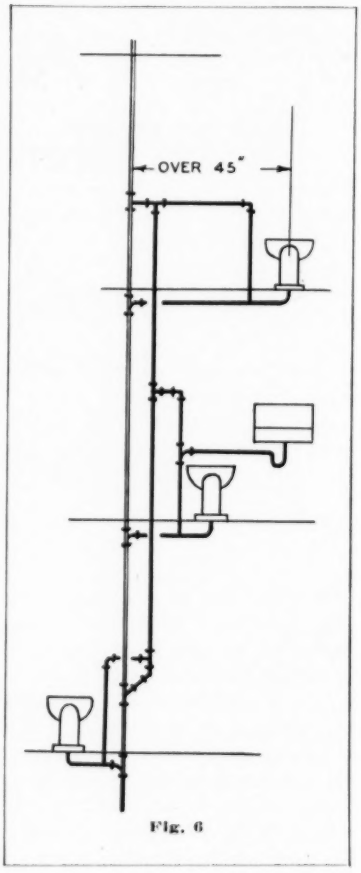


Fig. 6

"There is a decided tendency for the water to spiral with very low volumes of flow, evidently due to the variable frictional resistance encountered."

We have given the foregoing quotation from the Hoover report for the purpose of showing that it is not necessary to fill a vertical stack completely full of water in order to set up conditions that may produce siphonage of water closet trap seals. On page 103 of DOMESTIC ENGINEERING of August 9th, 1930, will be found added testimony that water closets are subject to siphonic influence. If they are in danger of siphonage under certain conditions, then it seems reasonable and necessary to vent them in order to overcome this danger, notwithstanding there are those who consider such venting unnecessary.

If we were going to make an elevation showing the general method of installing three water closets on three different levels, one above the other, we would point to Fig. 1 as showing the practice that is most

generally followed. It will be noted that a 4-in. stack is shown. This size we use in the illustration not because we necessarily believe in its use, but because that is the size still generally used whenever even a single water closet is to be served.

3-in. Stack May Serve Eight Bathrooms

The Hoover investigation and report has shown conclusively that a 3-in. vertical stack is capable of serving as many as eight bathrooms when properly vented. Through this study of the subject, made by the United States Bureau of Standards we have known since 1924 that it was unnecessary to use as large as 4-in. pipe for stacks in dwellings and in many other buildings, and yet a very large majority of cities and towns are still using 4-in. and larger. You ask why this is so. Undoubtedly there might be numerous answers to this question. While many different reasons may apply, the big reason as we look at it, is that the use of 4-in. has so long been the custom that a change to some other size is brought about only with the greatest difficulty. There are many intelligent men connected with the plumbing trade who still look askance at the 3-in. soil stack, even in the face of the guarantee that such an authority as the Bureau of Standards gives it.

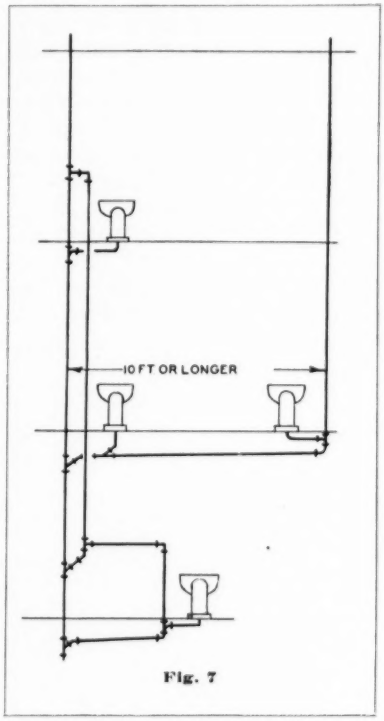


Fig. 7

We look for the time to come when the 3-in. soil stack will be in as common use as the 4-in. stack has been during the past, but owing to the human factor or factors that enter into the proposition, we believe it will be a long time before this result is accomplished.

Nevertheless, we are glad to point out that several states and scores of cities and towns have already adopted the 3-in. stack. However, whether the stack is 3-in. or 4-in. does not affect venting practice to any extent.

In Fig. 1 it is noted that the top floor water closet is not vented. The reason is that when it sets close to the stack, a top floor water closet is not subject to siphonic influence and therefore needs no separate vent.

Nevertheless, as we shall see later on, quite a few city plumbing codes call for this fixture to be vented.

We have had quite a bit to say about the Hoover code, and have often in the past pointed to it as a safe guide for plumbing practice.

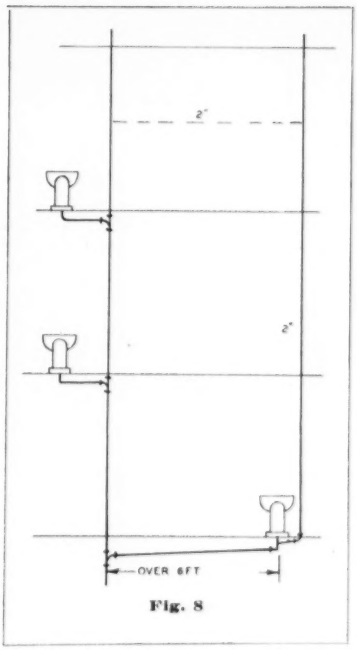


Fig. 8

Hoover Code and Hoover Report

In Figs. 2, 3 and 4 we show three elevations of water closets on three different levels, each of which follows the recommendations of the Hoover report. It will be noted that we refer here to the Hoover report rather than to the Hoover code. The latter, so far as we know, makes no reference to the details of plumbing installations, such as seen in these three illustrations. In the report, however, on which the code recommendations are based, various installations are illustrated and recommended, and it is from these typical installations that Figs. 2, 3 and 4 are taken.

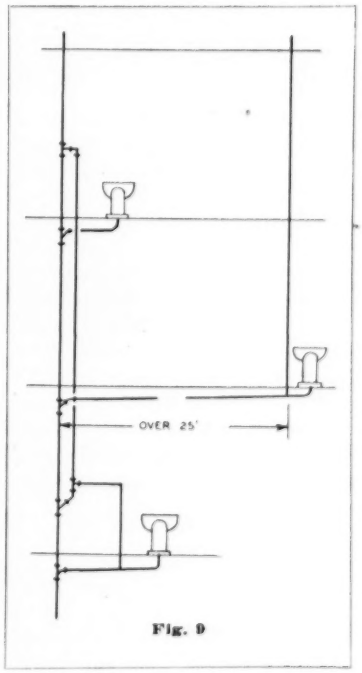


Fig. 9

It is well known that one of the chief efforts of the Hoover investigation into plumbing practice was the simplification of plumbing, — simplification without loss of efficiency. This feature is demonstrated in each one of the three layouts by the use of what is gener-

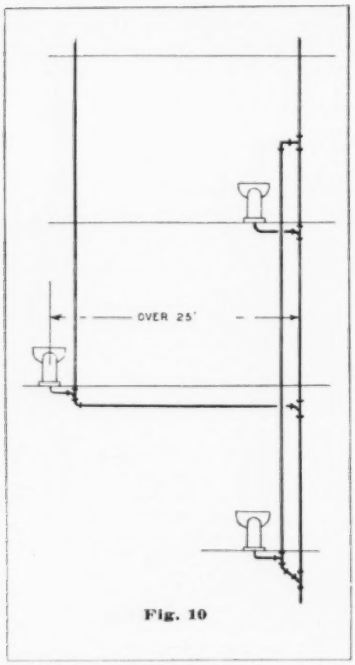


Fig. 10

ally known as wet vents.

In Fig. 2 for instance, the water closet on the second floor is vented by the lavatory connection. The same thing appears in Fig. 3, and in Fig. 4 the second floor water closet is vented by the common waste and vent or unit vent serving a pair of lavatories. To be correct practice, in each instance the lavatory connection throughout should be 2-in. Practically all plumbing codes demand the use of 2-in. vents for water closets, and if the lavatory connections were any smaller, this requirement would not be met.

There is still much objection to this type of venting. We would probably not have to go back more than ten or a dozen years, however, to find a large majority opposed to the practice, probably almost no one favoring it. However, in the light of modern knowledge directed to the consideration of the subject, it is seen that in the case of bathrooms it very seldom happens that the lavatory and water closet are both in use at the same time, and the flushing of the two fixtures at exactly the same instant is still less likely to occur. Therefore the chance that the same connections will be called upon to act as a waste for one fixture and as a vent for another at the same instant is very remote. That being the case, why should the one connection not be used for two useful purposes rather than for one? We suspect that in many instances the use of this type of venting is frowned upon more because of the influence of past thought upon the question than because anything wrong can be proved against the practice under correct conditions.

In the case of Fig. 2, there is no separate or individual vent for the lowest water closet, but it will be noted that the main vent stack is carried down and connected into the soil stack within a very few inches of the lowest closet, and this in our opinion affords excellent venting for that fixture.

Discharge Cleans Vent

The connection of the wash trays into the foot of the vent stack is in line with the effort for simplification. The fixture is perfectly vented, a considerable saving in cost is effected, and furthermore the wash tray waste washes the foot of the vent stack of all accumulation of scale, etc.

The lowest water closet in Fig. 2 is vented through the wash tray connection.

In Fig. 4, water closet and wash trays are shown with separate vents, as ordinarily required.

Quite in contrast with the Hoover effort toward the simplification of plumbing installations is the layout shown in Fig. 5. This is taken from the pilot drawing of one of the cities in the state of Oklahoma. In our opinion the safeguarding of the top floor water closet and the combination fixture on the floor below is overdone. Let us see what is done in this line for the water closet. Here is a fixture which is located close to its stack, with no fixture entering the stack at any point above. As we have already pointed out, such a fixture needs no further protection than that which the stack provides passing through the roof. And yet, such a fixture has to be provided with a separate vent. Moreover, it is also further protected by the wet vent connection which the lavatory provides. This is certainly a needless waste of money, and if the owner were aware of the situation he would be justified in raising an objection.

The connections for the combination fixture are novel and needlessly expensive in our opinion. As we look at it, a single trap with a single waste and vent connection would be sufficient. The same arguments that are back of these connections if applied to a three-part wash tray, might be expected to result in the use of three traps and three sets of waste and vent connections for that fixture.

We are never in favor of anything but the simplest con-

(Continued on Page 111)

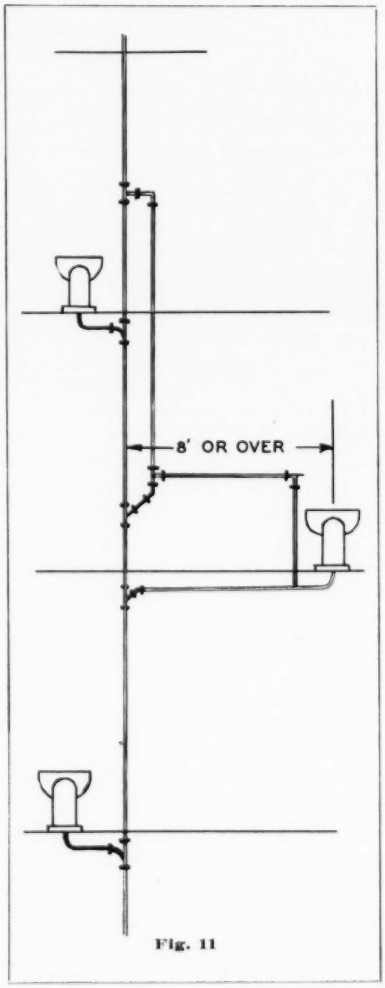


Fig. 11

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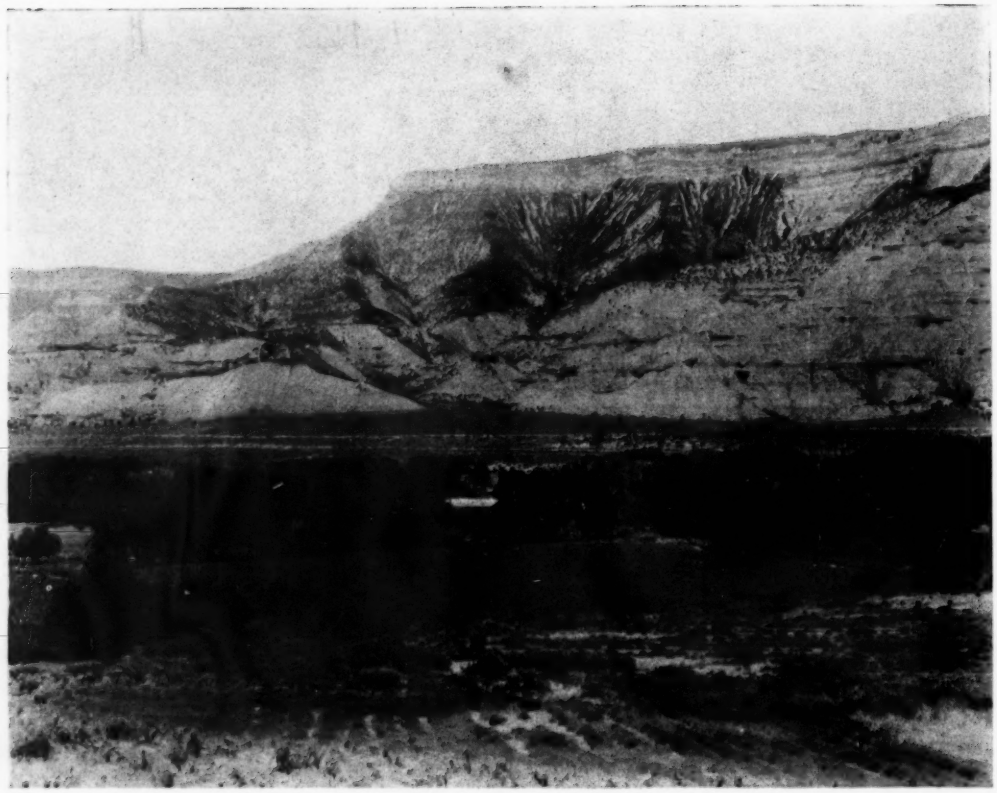

Oil shale cliffs in Colorado. Oil may be distilled from the shale, and formations or deposits such as these are looked to as a possible emergency supply, if not a future supply of fuel oil

New Oil Standards Aid Contractor

Make it easier to select proper grade of fuel oil for a given burner

Put all domestic fuel oils into three classes

Help to place responsibility for operation failures

Eliminate confusion by simplifying technical terms

By ARTHUR H. SENNER

BEFORE entering into a discussion of the oil burner as regards combustion of fuel, stack temperature, efficiency or what not, it is generally deemed necessary to treat of the source and characteristics of the fuels themselves. This has been done many times before. However, the reason the present writer has for presenting such introductory material is that an attempt will be made to discuss fuel characteristics with direct reference to the comparatively new commercial standards which are very fortunately finding their way into more general use by the trade and the public.

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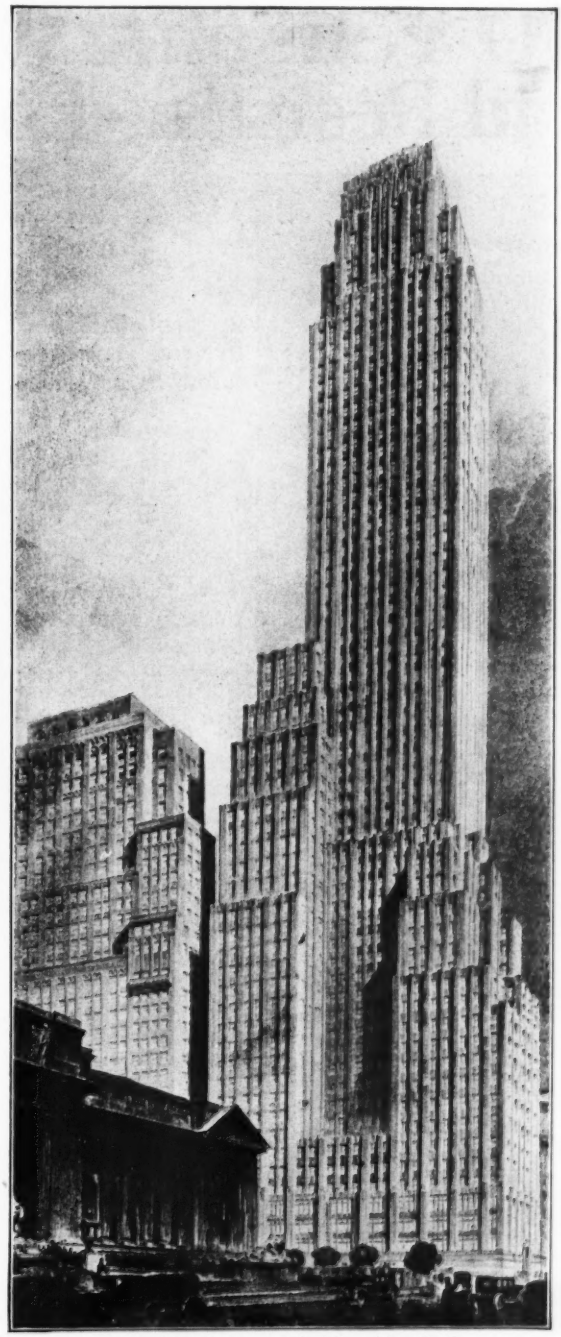

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WALWORTH COMPANY

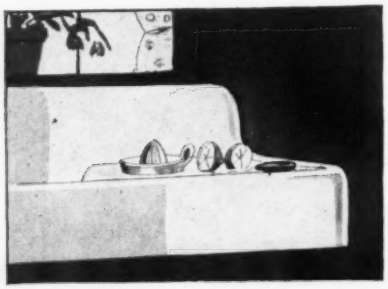
General Sales Offices: 60 East 42nd St., New York
Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa. and Attalla, Ala.

• DISTRIBUTORS IN PRINCIPAL CITIES OF THE WORLD •

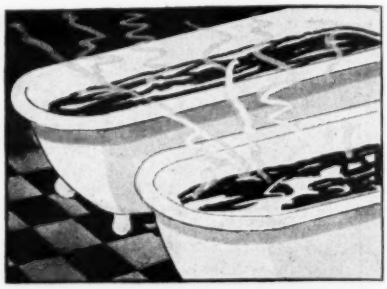
WALWORTH

VALVES - FITTINGS - AND TOOLS

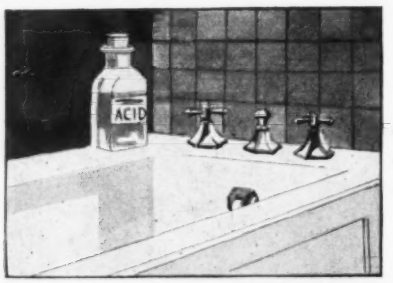
10 reasons why "Standard" Acid-Resisting Enamel sells itself!



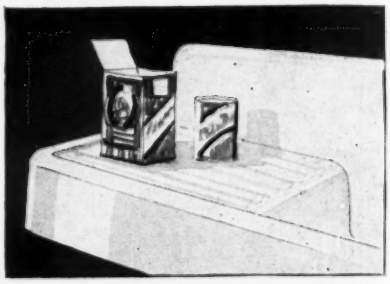
1. It resists dyes and cleaning chemicals.



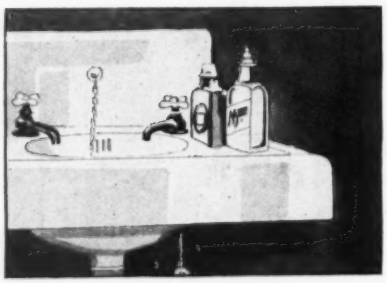
2. Is not affected by fruit or vegetable acids.



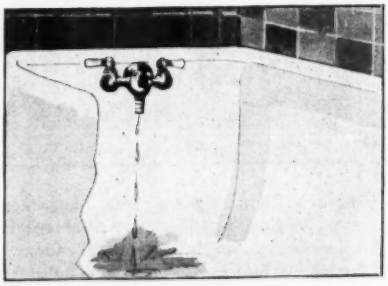
3. Little or no scouring or scrubbing is needed to clean it.



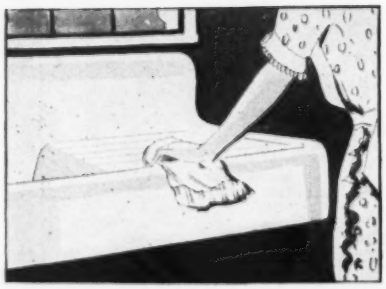
4. Not affected by cleaning acids used by tile-setters.



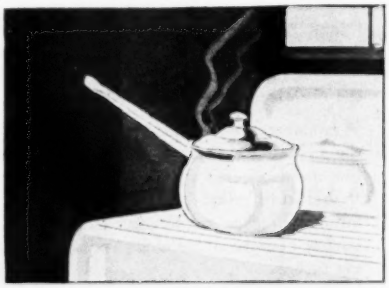
5. Rust and mineral stains from the water can be removed with no harm to the enamel.



6. It is not affected by medicines or toilet preparations.



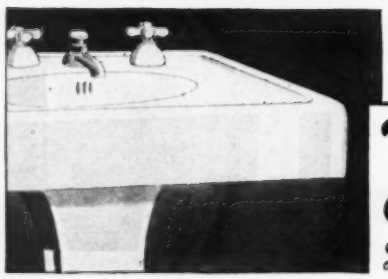
7. Spots left by pots and pans can be removed without harming it.

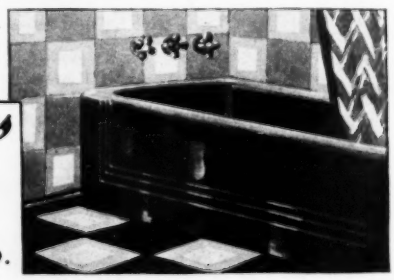


8. Easier to clean—less work for the housewife.

9. It's greater durability gives longer life to the glistening surface.

10. It's greater durability of surface assures lasting beauty to fixtures in color.





"Standard" Acid Resisting Enamel is marked permanently Standard A-R

"Standard" PLUMBING FIXTURES

Standard Sanitary Mfg. Co.
Pittsburgh

DIVISION OF
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

cipally of hydrogen and carbon. The color of petroleum varies considerably. Petroleum is of evidently vast importance to society in its present status. Gasoline, the most important automotive fuel, and lubricants are obtained from petroleum. It provides the fuel oil which is used for heat and power purposes and the gas oil which is used for the enriching of manufactured gas. The by-product industry of petroleum is of great importance and its possibilities have doubtless only been touched on.

The layman is apt to think of oil as a recent discovery and associate it with our modern oil burners and the automotive industry. As a matter of fact, oil was known and prized among the prehistoric people. According to record the ancient peoples of Persia, Asia Minor and China used oil for heat and light. Bitumen and asphalt were used by mankind in the first permanent habitation on the banks of the Euphrates River for the repair of leaks in boats. The stones of Nebuchadnezzar's palace were cemented with bitumen. Petroleum was also used in China and Japan long before the Christian era. In fact, it may perhaps be safely stated that almost all the ancient tribes used petroleum in one form or another.

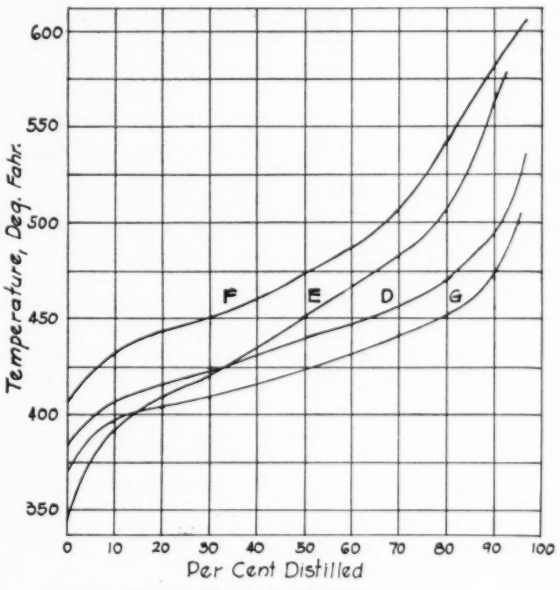


Fig. 1—Chart of volatility curves

In the United States the petroleum deposits of western Pennsylvania and neighboring states were the first to be used commercially and the first well, of which we have record, was sunk in Pennsylvania in 1869. Until 1876 the production of oil in this country was restricted to Pennsylvania and New York. The maximum production of the Pennsylvania fields was reached in 1891 and in that year this region produced slightly over 60 per cent of the country's total output. In 1900 the Appalachian fields produced their peak of approximately 57 per cent of the country's total output. In 1926, as a contrast, the Appalachian fields produced only about 80 per cent of this 1900 output and this represented less than 4 per cent of the country's production for 1926.

The petroleum fields of the United States may be divided into seven major districts: (1) The Appalachian district, (2) the Lima-Indiana district, (3) the Illinois district, (4) the Mid-Continent district, (5) the Gulf Coast district, (6) the Rocky Mountain district, and (7) the California district. It is interesting to note that while these crudes may vary widely as to color, gravity, base, etc., the amounts of carbon and hydrogen as revealed by a chemist's analysis do not vary materially. Table No. 1 gives the analysis of crude petroleum from the various fields.

Table 1. Analyses of Crude Petroleum

Source	Carbon	Hydrogen	Oxygen, Nitrogen and Sulphur	Gravity (Baume)
Pennsylvania	84.90	13.70	1.40	28
West Virginia	83.50	13.30	3.20	30
Ohio	84.20	13.10	2.70	28
Texas (Beaumont)	84.60	10.90	4.50	22
California (Bakersfield)	81.50	10.00	8.50	15

According to the commercial standards of the present day, which will be dealt with subsequently, there are three main classes of oil fuels which are adaptable to the domestic oil burner. These fuels are procured from the crude petroleum by distillation, with some subsequent purification, so that the oils which are consumed by the domestic oil burner are considerably lighter and contain less impurities than the original crudes. Fuels are derived from crude oils obtained in the various districts so that their properties naturally vary somewhat.

The three grades of oils which are generally used by the domestic burner of today represent only a very small part of the total oil fuels produced. Most of the fuel oil produced is entirely too heavy and is generally unsuited to the needs of the present day domestic burner. According to 1928 figures of the Bureau of Mines, commercial and industrial burners afforded a yearly output of 345,000,000 barrels of the heavier fuel oils. The future supply of such oils depends largely upon the extent to which oil fuels will be used for the manufacture of gasoline.

Future Supply of Oil Fuels

Everyone affiliated with the domestic oil burner industry is necessarily concerned with the future supply of oil fuels. It is interesting to note the following figures in this connection. The availability of oil fuels for the domestic oil burner depends upon the familiar law of supply and demand; that is, the supply of crude petroleum and the relative demand for its various products. The total production of crude petroleum in this country in the year 1925 was approximately 760,000,000 barrels and the consumption was about the same amount. In 1928, the total production was about 900,000,000 barrels with a practically equal consumption. In 1925, the total gasoline content represented approximately 35 per cent of the crude run, of which, almost 27 per cent was obtained from oil fuels by the process of cracking. In 1928, however, the total gasoline represented about 41 per cent of the crude run, of which almost 27 per cent was obtained by cracking oil fuels. The demand for gasoline is growing and if the supply of crude should become inade-

quate, large amounts of oil fuels would doubtless be cracked into gasoline. However, since no one knows what improved methods of extraction and steps toward conservation of supply will be made and also if it be borne in mind that many geological predictions with regard to petroleum supply have gone far afield, it should be evident that it is a difficult matter to make any accurate prediction as to the future supply of oil fuels.

Comparative Properties of Fuel Oils

The important properties with regard to oil fuels for domestic burners are as follows:

(1) Flash point, (2) water and sediment, (3) pour point, (4) volatility, and (5) viscosity.

The tests for these factors can be made satisfactorily only in the laboratory. The significance of each of the various factors indicated is as follows:

The flash point of an oil may be defined as the temperature to which it must be heated in order to give off sufficient vapor to form an inflammable mixture with air. The minimum flash point is usually fixed by law. When there is no legal minimum, the values are as presented in a table which is to follow.

Water and sediment are limited to very small amounts in the lighter oils which are used in the automatic domestic oil burner. Water and sediment are usually detected and measured by the aid of the centrifuge. The objection to these elements is obvious.

The pour point of an oil is the lowest temperature at which the oil will flow. This determination is made, of course, under certain specified conditions. The pour-point specification is important because it is quite essential that any oil used shall be free-flowing under the lowest temperature conditions to which it may be subjected.

The volatility of an oil for domestic oil burner use is of importance. The determination is made by means of a small still. A sample of the oil under consideration is gradually heated and the amount which has been distilled at various temperatures is noted. The temperature at which the first bit of the oil is distilled off is known as the initial point and the temperature at which the last bit of the oil is distilled off is known as the final point. Since the initial point is difficult to determine accurately, the 10 per cent point instead is generally used in specifications. The 10 per cent point serves as an indication of the ease of ignition of the oil and the 90 per cent point and end point serve as indicators of the ability of the oil to burn completely and produce a minimum of carbon or residue.

The viscosity of an oil is a measure of its resistance to flow, and to atomization. The maximum viscosity is specified in order that resistance to flow of the fluid through pipe lines and to atomization in the burner shall not be above a value for which the burner and accessories have been designed.

Until recently oils were specified almost solely on the basis of gravity or weight. This characteristic is easy to determine by means of a hydrometer similar to that which is used for determining the condition of storage battery fluid. The markings or scale are, of course, different in the two cases. Gravity is expressed in degrees, Baume or A. P. I., the latter being an abbreviation for the American Petroleum Institute which devised the latter scale. Both the Baume and A. P. I. scales are arbitrary and differ but very little in their graduations. On both these scales, the 10-deg. mark corresponds to the specific gravity of water, and as the Baume or A. P. I. readings increase, it is an indication of a lighter liquid. For example a 14 deg. Baume oil is an oil which is somewhat lighter than water. Such an oil is the thick, viscous, black fuel oil which is used in the larger industrial burners of the pre-heating type. The 38-deg. or 40-deg. Baume oil is considerably lighter than water and is the light domestic oil burner fuel with which we are all familiar. The convenience with which the gravity could be determined was undoubtedly the principal reason for the use of this property in describing or specifying oil-burner fuels. However, the present writer published material some years ago which showed clearly how little real significance gravity has as an indication of the true properties of a domestic burner fuel. Similar material is presented in brief form in Table 2 and in Chart Fig. 1. The analyses were made by the U. S. Naval Engineering Experiment Station at Annapolis, Maryland. The various oils tested were selected at random in the open market from different producers. All the oils were sold on the gravity basis and were designated by the producers as 38-deg.-40-deg. Baume fuels.

The chemist's analysis revealed, however, that the oils actually had gravities varying from 35.68 to 40.94 (see Table 2). The viscosity varied little. The color varied from colorless or water white to straw. The B.t.u. content variation was not abnormal. The flash point, however, which is really significant as regards ease of ignition, varied from 130 degrees to 165 degrees Fahrenheit. The distillation tests are shown in Figure No. 1, as stated above; the 10 per cent point is an index of the flash point. This can be verified by noting that oil "E" has the lowest flash point and is, according to Fig. 1, the most volatile. That is, less temperature is required to distill the first 10 per cent off of this oil than is required

Table 2. Analyses of Oils

	Samples			
	"D"	"E"	"F"	"G"
Gravity designation under which oil was sold	38-40	38-40	38-40	38-40
Specific gravity at 60/60 deg. Fahr.	0.843	0.823	0.818	0.845
Degrees Baume	36.07	40.11	40.94	35.68
Flash point, deg. Fahr.	155	130	165	155
Viscosity, Saybolt Universal Viscosimeter, at 100 deg. Fahr.	41.5	41.5	.....	41
Water and sediment	None	None	None	None
Color of oil	Straw	Straw	Colorless	Straw
Gross B.t.u. per pound	19,471	19,991	20,572	19,959
Gross B.t.u. per gallon	136,686	137,138	140,095	140,511

for the others. Oil "F" has the highest flash point and from the curves in Fig. 1 it can be seen that it is also the least volatile at the 10 per cent point, as would be expected. The curves also show clearly that while an oil may be more volatile at the lower range it may be less volatile at the upper range. Take, for example, oil "E," which is the most volatile at the 10 per cent point and yet is almost the least volatile at the 90 per cent point. In between the 10 and 90 per cent points, its curve crosses the curves for both oils "D" and "G." The fact that oil fuels, even in the respective grades which are

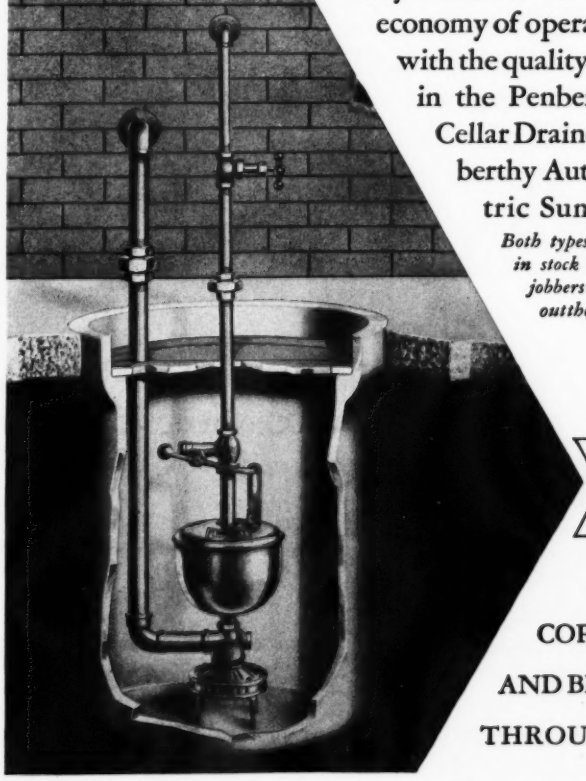
(Continued on Page 155)

the Pumps that *Cannot Rust*

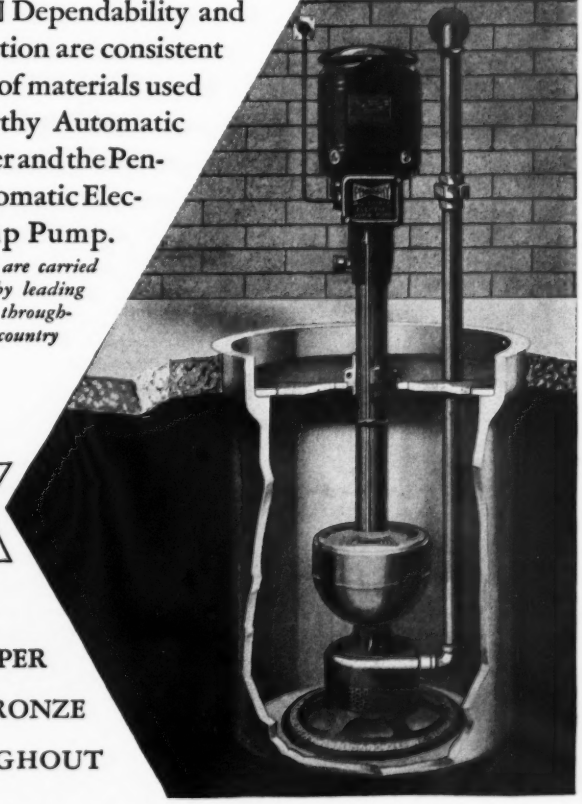
Rust, the eternal enemy of iron and steel, is ever alert for the attack whenever these metals are exposed to water, and protective coatings are at best only a partial defense. ¶ Positive protection against the danger of rust has been achieved in the Penberthy Automatic Electric Sump Pump and the Penberthy Automatic Cellar Drainer, by the complete elimination of iron and steel. These pumps are built of copper and bronze throughout — they cannot rust. ¶ Dependability and economy of operation are consistent with the quality of materials used in the Penberthy Automatic Cellar Drainer and the Penberthy Automatic Electric Sump Pump.

Both types are carried in stock by leading jobbers throughout the country

Automatic (Hydraulic) Cellar Drainer



Automatic Electric Sump Pump



COPPER AND BRONZE THROUGHOUT

PENBERTHY INJECTOR COMPANY

ESTABLISHED IN 1886

DETROIT

CANADIAN PLANT WINDSOR, ONT.

RETAIL ADVERTISING SERVICE

The Basement Becomes Important

Winter calls attention to the basement—and its possible improvement. We tie that fact up with a very definite family need in the plumbing copy on this page.

Let's go down the stairs

and into the basement—the most neglected area in the American home. Here is ample space for one convenience every housewife would appreciate—a basement toilet, so that the children, coming in from their play will not have to track up the house. It means less work, and will encourage the children in right habits. The cost would be small—and space required hardly more than a corner. Just phone

(In this Space Your Name, etc.)

Here's an unusual two-column ad

For the Children

— a basement toilet

It is really a necessity. They must be encouraged in healthful habits—and the basement toilet will relieve the housewife of the slush they will bring into the house from their winter play. Small space and a small sum will put this great convenience in your basement. Just telephone.

(In this space Your Name, etc.)

A one-column ad

Dear Madam:

With the approach of winter, we are recommending to our customers the installation of toilet facilities in the basement, particularly where there are children.

In the latter case, of course, it permits the children to come in from their play without carrying snow and mud all over the house. But the facilities will be no less a convenience for the rest of the family.

It will be a convenience for those members of the family, or servants, who have occasion to work in the basement.

At the present time, there is probably no portion of the American home more neglected than the basement. Yet, in many homes, it is being developed and added to the home as a comfortable work or recreation area.

We'd be very glad to talk it over with you--without obligation of course. Just telephone.

Very truly yours,
HARRY BROWN

Here's a Sales Letter

A Basement Toilet

will take but little space, and cost less money—yet will represent a great convenience in the family where there are children.

(In this space your name, etc.)

For your classified ad

How to secure the cuts for these newspaper ads

Every other week we publish two new illustrations. They're 35c each—usually ordered for twelve weeks in advance at $4.20. *We send the two new cuts every other week.*

RECOMMENDS BASEMENT PLUMBING FACILITIES

"This winter," says Harry Brown, local plumbing contractor, "we are recommending that our clients develop that great waste space in the American home—the basement.

"Few people realize that the area of the average basement will permit many conveniences. Where there are children, we are recommending the installation of basement toilet facilities so that they may come in from their play without tracking up the house.

"Of course, there are other possibilities for the basement. It may be made into a recreation area for the whole family—if it is properly developed, and the needed facilities installed."

Give this publicity on the second bathroom to your local newspapers

Copy for Heating Sales

As the inconveniences of the average heating system develop under use, heating contractors should bombard their communities with copy on modern heating plant arrangements—particularly for the older home. Here's copy which will help secure such business.

This was romantic

Or at least so it seems to us now — though the Puritan Fathers probably found it inconvenient enough. But many a modern home endures inconveniences in its heating arrangements not altogether unlike those suffered by the Puritan Fathers. To these homes we suggest modern heating—and will be glad to explain just what we mean, without obligation. Just phone.

In this space Your Name, etc.

For one-column space

What do we mean by Modern Heating?

By "modern heating", we mean heating that comes as close to taking care of itself as it is humanly possible to make it. We can show you heating arrangements here for which, practically speaking, the owners do nothing but turn them on at the beginning of the heating season, and turn them off at the close of the cold weather. That's the ultimate ideal—but it can be worked to step by step. We'd be glad to look over your heating plant and suggest the first step. Just phone.

In this space Your Name, etc.

A two-column heating ad

Dear Sir:

The ultimate ideal in a heating plant is one which you turn on at the beginning of the heating season and then forget until spring comes again.

We say that's the ultimate ideal, because even if you are not ready to invest in such a plant, it is possible to so modernize your present heating equipment that it will be to a large degree automatic.

Many appliances have been introduced in the last few years which contribute to this possibility. You may have automatic feeding with coal, oil, or gas. You may keep the temperature just where you want it with any of these fuels. You may humidify to a greater or less degree, as it seems pleasant to you.

Every heating plant--like any piece of mechanical equipment, ought to be gone over now and then and brought up to date. We are urging our clients now to have us go over their heating equipment before the bitterly cold weather comes.

If you will telephone, we'll have a competent man look over your plant and make such recommendations as seem necessary.

Very truly yours,
HARRY BROWN

And mail this letter to your customers

The copy on these two pages is for the use of readers of DOMESTIC ENGINEERING —with or without the illustrations, as they may choose.

If you are using any of this copy, send us samples so that we may keep in touch. Perhaps we'll be able to offer further assistance.

At any rate, make use of the ads and letters and publicity—they will help create new business for you.

HEATING MAN TALKS OF OLD-FASHIONED MODERNS

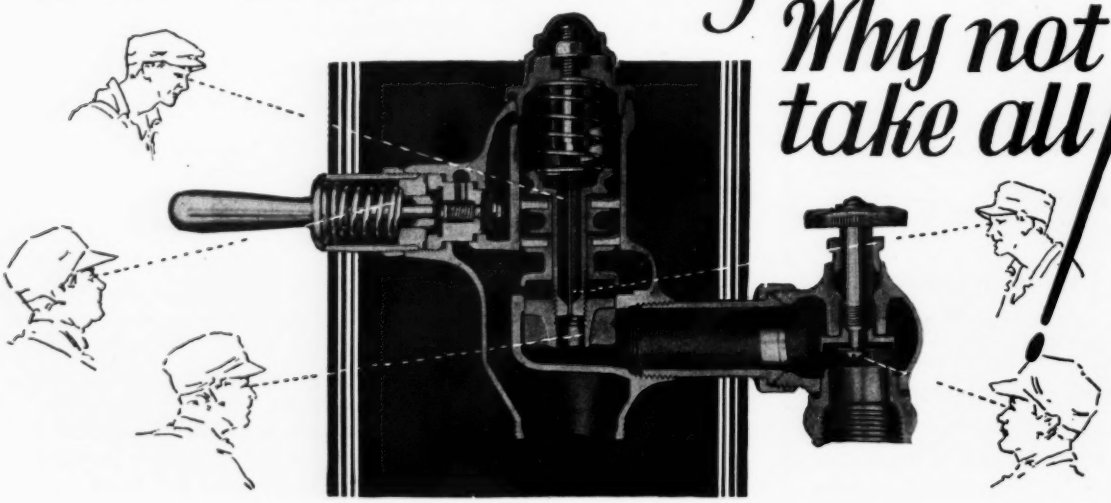
"A lot of us boast of being modern," says Harry Brown, local heating contractor, "and proceed to enjoy things that are as out-of-date as hoop skirts and bustles.

"Naturally, I'm talking about heating plants—because that's my specialty. But it does seem strange to me that in so many homes, where there is a group of thoroughly modern people, they will undergo all the inconveniences of a heating plant that was new when Sara Bernhardt was considered almost too much of a modern.

"Two years outdates a car in these families—yet twenty years, and even more, doesn't seem to impress them as much in the life of a heating plant. Perhaps it isn't—except that such old plants are inconvenient, dirty, and in most cases uneconomical. If we're going to be modern—let's go the limit—with heating plants."

Hand this publicity item to your newspaper

One Advantage.....? Why not take all!



DO you select the flush valves you're accustomed to using because they give you *one* desirable advantage?

Is this advantage Quality, Price, Ease of Installation, or Outstanding Design or Construction?

Why not *take* ALL of them? In Scovill Flush Valves, which give you the most for your money, you can!

Low installation cost (saved time) is assured because of their unusual adaptability. Low eventual cost is assured because of their positive, trouble-free performance—because of freedom from worry about subsequent servicing. Superior design, superfine materials, superb manufacture, are combined, in the Scovill Flush Valve, to give you EVERY ONE of the outstanding advantages of all other flush valves combined!

Profit-wise plumbers don't gamble for the sake of one advantage. They can't when practically every flush valve installation nowadays *demands all* possible advantages in material, in construction, in installation, to give *immediate* profits which will not be dissipated by subsequent servicing.

The comprehensive Scovill catalog gives you every detail of these all-advantage, all-superior flush valves. Write today for this profit assuring information.

—and KNIT-WICK (plumber's lamp wick knitted into gasket form) will save you time and trouble on many a joint. Waterproofed, preserved, graphited. The best wicking you can buy. Be sure to remember KNIT-WICK.

SCOVILL MFG. CO.
Plumbers' Brass Goods Division
Waterville Connecticut

SCOVILL

Flush Valves ~ Shower and Bath Fixtures ~
Tubular and Miscellaneous Plumbers' Brass Goods
A COMPLETE LINE

Interest Farm Trade in Plumbing by Installing

Hydraulic Rams

This stream of water is coming from one spring in Clark county, Indiana. The supply pipe is extended well back into the spring cave. Note that the ram is resting on a large rock and is held in place by the supply and discharge pipes

— The only power needed is water from a spring

— Three gallons per minute will do the job

— They operate 24 hours per day

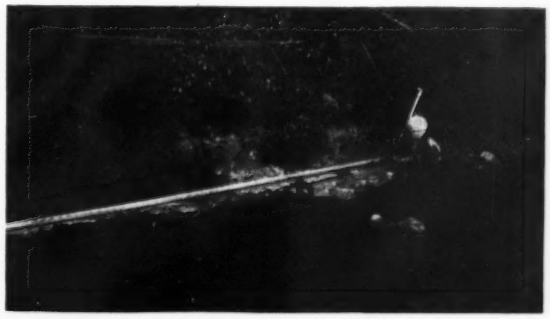
— A 3 ft. water fall is sufficient

By G. O. HILL

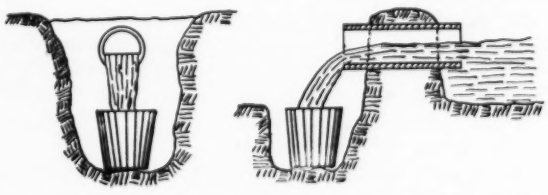
WATER is a constant requirement about the home; therefore, no improvement will add more to the convenience, satisfaction, health and comfort of the family than will an abundant and unfailing supply of good water.

On many farms we find that the farmstead is located near springs or other convenient and desirable water supplies. In these cases, running water in the buildings may be made accessible easily. Generally it is the farm that is dependent upon well water or spring water at a distance, that has the most unhandy water system; thus requiring considerable time in supplying water for the daily needs about the home.

Conveniences about the farm home are no longer considered luxuries, but on the contrary they are considered as essential features to a well kept and a well planned farmstead. A convenient water system in farm homes is not only a pleasure and a labor saver, it is also a preventive measure toward losses due to fires. During the past few years manufacturers have been giving much attention to placing on the market an individual water system that would be adaptable to any sized farm home and under widely varying conditions. These ideas have been so well formulated and carried out that today it is possible to select a system which will fill practically any needs and justify the cost of buying and installing. Water systems operated by small electric motors, small stationary engines and hydraulic rams are the three types of water systems that are most adaptable to rural districts. The hydraulic ram, although one of the least used types of water pumps, is the most economical method of supplying running water where conditions are favorable for its operation.



A single action hydraulic ram operating on a farm in Clark county, Indiana



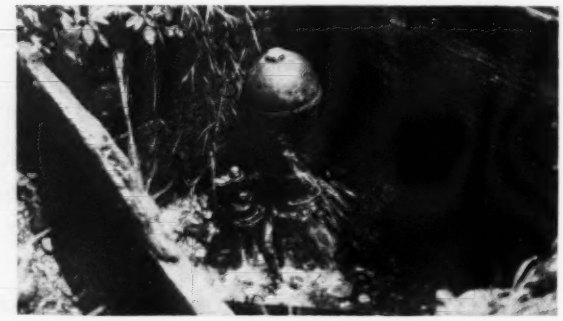
A method for measuring the capacity of a spring. Determine how many seconds are required to fill a bucket of known capacity

When a plumber becomes familiar with the topography of a county suitable for the installation of hydraulic rams, he can find a number of suitable ram sites on a day's trip, and very often the farmers who possess the ram sites are very glad to have a ram put in. Rams are not only adaptable to farm homes, but are also frequently used to supply water to industrial plants, construction

projects, to supply engine water tanks, park ponds and water for summer resorts, etc.

The single action ram is a type of water pump which uses the energy of falling water to force a portion of this water to a level higher than its source. The water can be forced into a watering trough, an open elevated storage tank or a hydro-pneumatic (pressure) tank. Water pressure for a complete water system can be obtained from either the overhead storage tank or the hydro-pneumatic tank.

The foremost characteristics of the hydraulic ram are:



A hydraulic ram in Tippecanoe county, Indiana, in a ram house. The surrounding box affords protection at all times of the year

1. It requires no power for its operation other than that supplied by the flowing water from the spring to the ram. 2. A water supply of three gallon per minute will operate the ram successfully. 3. It can be operated on as little as a three-foot fall from the spring to the ram. 4. It operates twenty-four hours a day. With these facts in mind, it readily can be appreciated that many farms might take advantage of this type of automatic water pump.

"Can I use a hydraulic ram?" Before this question can be successfully answered, it will be necessary to determine the following factors:

1. What are the daily water requirements? These can be closely estimated by allowing a consumption of forty gallon a day per person, eighteen gallon a day per head for cattle, two and a half gallon a day per head for hogs, two gallon a day per head for sheep and ten gallon a day per head for horses. When you consider this and any other needs you may have, add them up, divide by 1,440, which will give you the number of gallons or fraction of a gallon needed per minute.

2. Determine the vertical height, in feet, from the ram to where the water must be delivered. To have the ram operate most successfully, one should allow one foot of fall in the supply pipe to every seven feet the water is to be lifted vertically.

3. Measure the water supply available. To determine this, dam up around the spring so as to form a small reservoir. Place a pipe through the dam large enough to carry the normal flow of the spring. Then taking a pail of known capacity, find out how long it takes to fill the pail. Several trials should be made and the average of these taken. In this way it is easy to determine what the flow is in gallons per minute. If several small springs are found close together on a hillside but no one of them supplying enough water to operate a ram, the problem may be solved by joining each of the springs to a central reservoir a short distance down the hill, then connect the drive pipe from the ram to this reservoir.

4. How long should the supply, or drive, pipe be? The length of the supply line should be equal to the vertical lift, except in cases where the lift is short. If the fall is less than five feet, the length of the supply pipe should be eight or ten times the total fall. The ratio in size between the supply pipe and the delivery pipe is generally two to one. The size of the delivery pipe should never be less than one-half inch in size, due to the friction in the pipe.

The Ram House

A ram house, although not a necessary part of the installation, is a protection to the ram during winter months and is a good means of preventing the ram being tampered with. The owner should be encouraged to build such as protection. The ram house may be constructed of either wood or concrete, concrete being the more desirable on account of its lasting qualities. The size of the ram will determine the size of the house that should be constructed. The house should be large enough to allow ample space for one to work in when replacing valves in the ram or making other minor repairs.

When the ram house is used it will be necessary to install a floor drain and drain pipe to drain off the overflow water coming from the ram.

The foundation on which the ram is set should be solid. Good concrete is the best for this purpose. The drive pipe and the delivery pipe in some instances have been used to hold the ram in place.

Hydraulic Ram Table*

Size of Ram	Size of Drive Pipe Inches	Size of Discharge Pipe Inches	Vertical Height at Delivery in Feet	Fall in Drive Pipe in Feet	Length of Drive Pipe	Supply in Gallons Per Minute	Amount Delivered in Gallons Per Hour
No. 2	¾	½	20	3	30	2-3	10-15
No. 3	1	½	30	4	30	2-4	10-20
No. 4	1¼	¾	40	5	40	3-7	15-35
No. 5	2	1	50	7	50	6-12	30-60
No. 6	3	1¼	60	8	60	11-20	55-100

*Purdue University Extension Bulletin No. 91.

Storage Facilities

As the hydraulic ram operates twenty-four hours a day and at a fairly slow rate, the storage tank should be large enough to hold a day's supply of water. The overhead storage tank should be equipped with an overflow pipe which should be located near the top of the tank and should be large enough to carry the water away faster than the ram will pump it. If the hydro-pneumatic tank is used it should be equipped with a relief valve which should be set at about thirty pounds. The overflow pipes from either type of tank may be made to empty into a stock watering trough, thus making it possible to use the overflow water.

The amount of water that a hydraulic ram will deliver is dependent on many factors, but by referring to the accompanying table one will be able to work out all necessary factors.

Announcing

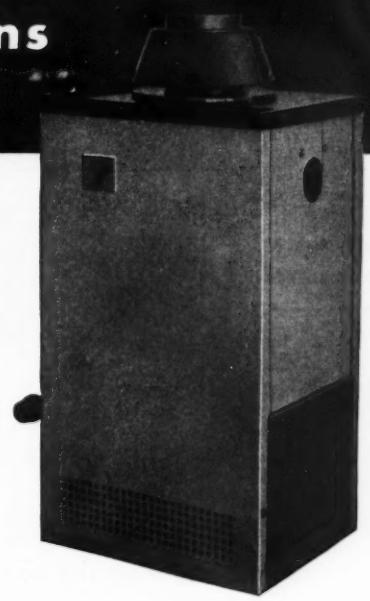
the new IDEAL ARCOLA GAS BOILERS

For smaller installations

Now there is an Ideal Gas Boiler for every size installation. The New Ideal Arcola Gas Boilers can be economically installed in even the smallest homes, apartments, lofts and stores, and connected to American Radiators, give the same efficient heating that the larger boilers give to larger buildings

The small size of the boiler and the low price open up new markets which for the first time can now be supplied—by the new 1-GA and 2-GA Ideal Arcola Gas Boilers alone. And they have another advantage. They are especially suited for furnishing hot water for homes and larger buildings.

Without jacket they are a unique combination of heating boiler, hot water supply boiler and radiator. Write us for details.



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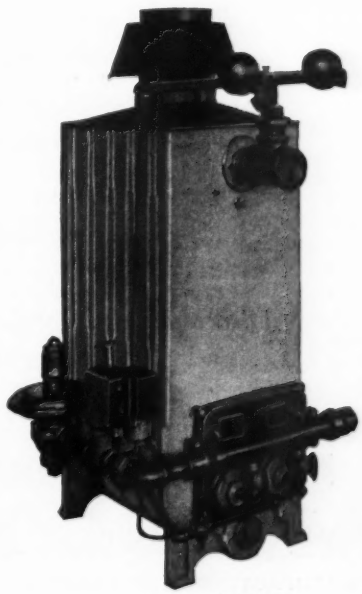


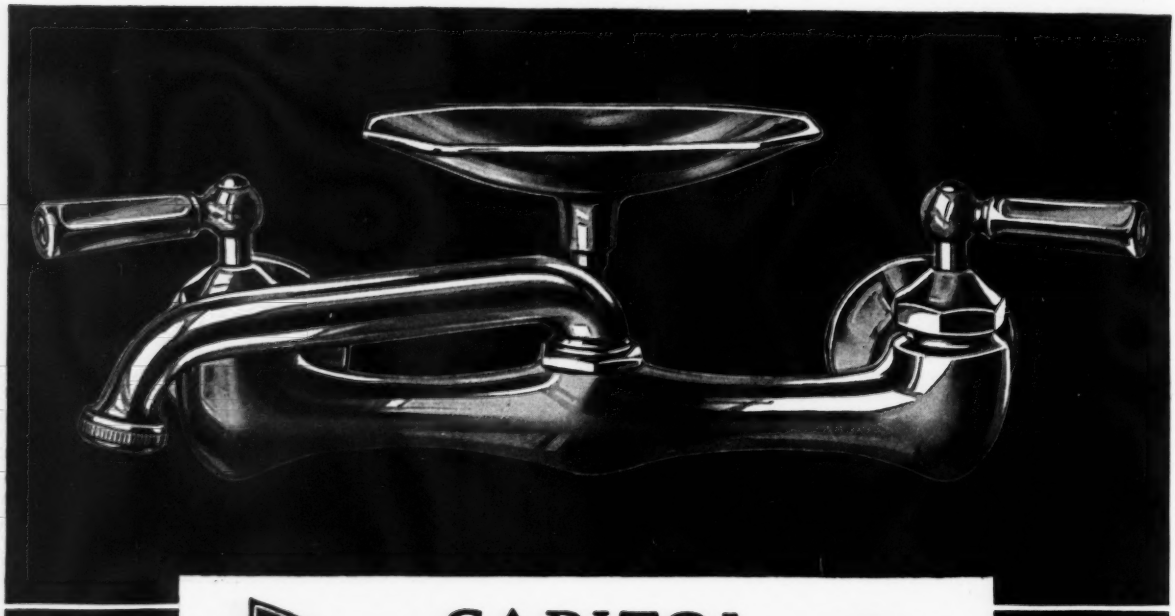
Unjacketed

AMERICAN RADIATOR COMPANY

division of

AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

40 WEST 40th STREET NEW YORK



CAPITOL BOHN-910 SINK FIXTURE

Here is a sink fixture that combines utmost utility with rare good looks—worthy of a place in the finest home.

It is obtainable in two types. In chrome-plate with china soap dish and china handles, or in chrome-plate with metal soap dish and metal handles.

Both are made with 8" centers and are obtainable at the same price with either female eccentric, or male adjustable couplings.

They are precision-made throughout and in keeping with those manufacturing standards which distinguish the entire Capitol line.

Displayed and furnished by the better plumbing supply houses and plumbing contractors throughout the country. If there is not a dealer near you, write to us.

Bohn Aluminum & Brass Corporation

CAPITOL BRASS DIVISION

MANUFACTURERS OF BRASS VALVES, BOILER TRIMMINGS AND PLUMBERS' BRASS GOODS

DETROIT ~ MICHIGAN

Letters to the Editor

Predicts Healthy Resumption of Building Activity

To the Editor:—

When my friends ask me the question, so insistent nowadays, "how's business?" I am forced to reply that with our company, business has shown a consistent increase over last year, each month a little ahead of the previous month.

Remembering the slump of 1921, when residential building was the force that lifted business out of that depression, I really believe that about the same condition is now about to occur.

Small house building has been declining ever since 1925 and the National Association of Real Estate Boards tells us that the ratio of supply and demand in single family and apartment houses is already healthy and normal.

With the most competent authorities agreeing that the bottom of the depression has been touched and that we are on the way up, it is most surely in the cards therefore, in my opinion, that residential building will again come to the fore and accelerate our recovery back to normal economic conditions.

It is an established fact that dealers and jobbers have less stock on their shelves now than at any time in history and we, therefore, anticipate from this time forth, a still further continual advance in our business from month to month.

Detroit, Mich. (Signed) W. S. Killam,
General Manager,
Capitol Brass Co.

Appreciates Information About Figuring Radiation

To the Editor:

Thanks for your letter and the information on the method of figuring steam and hot water radiation contained therein.

We appreciate that information which has been of immense value to us.

The method given in your letter is very comprehensive and a very good method, we believe.

(Signed) J. H. Simmons.
Ridgeley, W. Va.

Will Use Our Booklet on Remodeling

To the Editor:—We greatly appreciate your prompt reply to our recent letter sent you requesting a copy of your booklets entitled "Remodeling—The Big Sales Opportunity in Plumbing and Heating," and to say that we have received the copies okay, and expect to make very good use of same. We consider this most constructive work, and DOMESTIC ENGINEERING deserves the highest of praise for its splendid efforts.

If the members throughout the trade would just take one of your charts, make a thorough study of it, then make a mental picture of his customer's house, compare the two, then he will have an opening wedge to sell the lacking fixtures or material. If the chart is studied as it should be, then a wonderful prospect list can be made from it, and the only thing left is for the plumber to make diligent, and intelligent calls upon his customer.

We expect to stimulate interest in this chart among our members and see if we can arouse them as to the great benefits of its use.

(Signed) John W. Clark,
Executive Secretary,
The Association of Master Plumbers of the State of Maryland, Inc., Baltimore, Md.

Milwaukee Masters Doing Good Work

To the Editor:—I want to thank you for the editorial of October 4th which I take to refer to the Milwaukee Association. I am proud of my Milwaukee Association and feel that we are doing a constructive work. However, as I have told our officers, no matter how good any movement or activity we may have is, they are soon taken as matter of facts, and new activities must be launched to hold the interest of the members.

We are now planning a 10-day course at the engineering school, in Wisconsin university at Madison, to be held in February, 1931, to instruct our members in the theory of plumbing and hydraulics. This course is to be open to master plumbers, plumbing school instructors and plumbing inspectors, not to salesmen or apprentices. We are hopeful of good results from it.

(Signed) Lewis R. Friend,
Milwaukee, Wisconsin.

Plumbers Reduce Mortality Rate

To the Editor:

I enclose herewith a copy of an article that appeared in the edition of the St. Louis Times, worthy of passing along as it gives the plumber credit for reducing the mortality rate.

'LONGER LIFE

When told that the mortality rate is falling, lengthening the average span of life, many persons suppose that better doctors, improved living conditions and the natural course of evolution are responsible, but few associate with it an institution to which probably more than anything else man is indebted for the extra years on earth granted this generation. That institution is plumbing.

Plumbing is not what could be called a "sanitary" word, although it is the first word in sanitation. Perhaps it is denied its due credit because the word is associated with grimy workmen and apoplectic bills. But one need only to compare this country's death rate with that of those countries which have little or no plumbing, to find the reason for the lengthening span of life.

So recent is it that many can recall the time when the small communities of this country were sewerless and running hot water and bathtubs were a rarity. The adoption of plumbing has been amazing in its rapidity and not less rapid have been improvements in the methods and fixtures of plumbing.

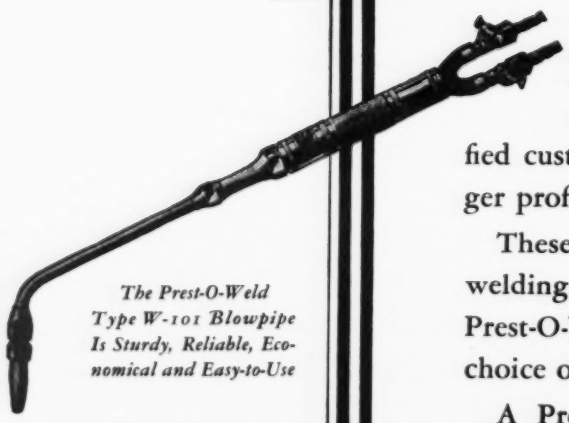
Twenty years ago plumbing was left to little better than unskilled laborers. Today plumbing has been raised to a science. Plumbing is the ounce of preventative.—Racine Journal-News.

(Signed) E. J. Blake,
General Secretary,
Contracting Plumbers' Association of St. Louis.

EQUIP FOR OXWELDING *with*

PREST-O-WELD

WELDING AND CUTTING APPARATUS



The Prest-O-Weld Type W-101 Blowpipe Is Sturdy, Reliable, Economical and Easy-to-Use

PLUMBING and heating contractors equipped to make oxwelded installations build good-will through better satisfied customers and, at the same time, make bigger profits on every job.

These contractors find that whatever their welding, cutting, and heating requirements are, Prest-O-Weld gives complete satisfaction. It is the choice of this progressive industry.

A Prest-O-Weld welding and cutting outfit often pays for itself in a few days' use through increased economy of time, material, and labor.

Sold by Jobbers Everywhere

OXWELD ACETYLENE COMPANY

Unit of Union Carbide UCC *and Carbon Corporation*

NEW YORK

SALES OFFICES IN PRINCIPAL CITIES

IN CANADA: DOMINION OXYGEN CO., LTD., TORONTO

Technical Publicity Dept. 12th Floor
205 East 42nd Street · New York, N. Y.
Gentlemen: Please send me your booklet titled "Oxy-Acetylene Welding and Cutting."

Name .....

Company .....

Position .....

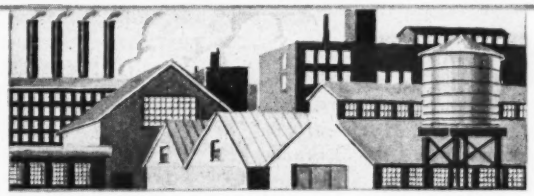
Street Address .....

City ..... *State* .....

D. E. 11-15-30

SUPPLY NEWS

AMONG MANUFACTURERS, WHOLESALERS AND SALESMEN



Kewanee Boiler Corp. Holds Annual Meeting

The board of directors of Kewanee Boiler Corporation of Kewanee, Ill., held its annual meeting in New York City on Friday, October 31, at which the following officers were elected: B. F. Baker, chairman of the board (he was formerly president and treasurer); R. B. Dickson, president; E. F. Wagner, secretary; Arthur Cook, treasurer; R. M. Powers, assistant secretary; E. H. Karan, assistant treasurer.

◆

Central Foundry Co. Opens New Warehouse

The Central Foundry Co., of New York City, has opened a new warehouse at which the company's products will be stocked, at 367-373 Gerard avenue, just south of 144th street, the Bronx. The old warehouse at 135th street has been discontinued. The new warehouse, show room and branch sales office, is for the convenience of the trade in the Bronx and Westchester as well as Manhattan.

◆

Cunningham Plumbing Supply Co. Moves Main Office

The Cunningham Plumbing Supply Co., Washington, D. C., has moved its main office and warehouse to new and larger quarters at 501 26th street, N. W. The company was organized more than fifteen years ago at

Insert at top: A view of one of the two branch offices of the Cunningham Plumbing Supply Co., Inc., in Washington, D. C. Below: A view of the company's main office and warehouse with some of the personnel

1234 Pennsylvania avenue, where it has been located until the present move. The old building is situated in the area known as "The Triangle," which is being acquired in its entirety by the Federal Government for government buildings.

In addition to relocating its main office and warehouse, the company has opened two new branch offices in the city. One of the branches is located at 1012 H street, N. E., and the other at 3700 Georgia avenue, N. W. Both branches carry a full stock of plumbing and heating materials and in each is a completely equipped display room.

The officers of the Cunningham Plumbing Supply Co. are U. G. Cunningham, president; P. J. O'Hanlon, secretary and treasurer; Norman P. Arey, credit manager. Herbert C. Ketchum is manager of the branch on H street, while J. T. Henderson is in charge of the Georgia avenue branch. Vincent P. Stecker and John J. Roche are connected with the main office as salesmen, while Roland E. Simons covers the city and parts of Virginia and Maryland.

◆

Opens New Sales Offices in Philadelphia

The Semler Co., of Jeannette, Pa., has opened new sales offices, located on the fifth floor of the new Market Street National Bank Building, corner of Market and Juniper streets, Philadelphia, Pa. Frank Martin, who is Semler Co.'s sales representative in this district, is in charge of the offices.

◆

Will Represent Manufacturers

Announcement has recently been made of the formation of Malvin & May, Inc., sales and industrial engineers, with headquarters at 332 South Michigan avenue, Chicago. The firm will cover the states of Illinois and Wisconsin.

Ray C. Malvin and M. F. May comprise the firm.

Announce Merger of Carrier Engineering Corp. Brunswick-Kroeschell Co. and York Heating & Ventilating Corp.

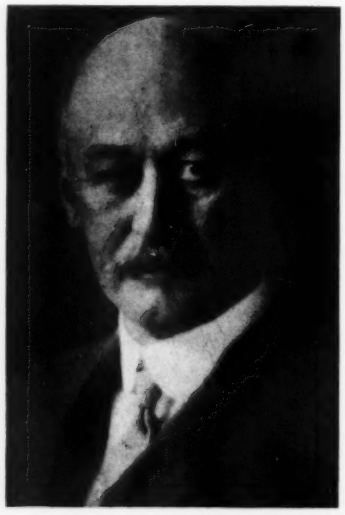
Merger of the Carrier Engineering Corporation of Newark, N. J., the Brunswick-Kroeschell Company of New Brunswick, N. J., and Chicago, and the York Heating and Ventilating Corporation of Philadelphia, each one of the largest concerns, respectively, in the air conditioning, refrigerating, and unit heating and ventilating industries, has just been announced. Including subsidiary and affiliated concerns, the merger will unite fifteen companies, five of them foreign, with total assets of approximately $15,000,000.

"The consolidation will provide a world-wide organization equipped to provide any desired kind of indoor atmospheric conditions in homes, hotels and apartment houses, stores, theatres, office buildings and industrial plants," J. I. Lyle, executive vice president of the Carrier Corporation, stated in making the announcement.

"Air conditioning and refrigeration have been two of the fastest growing industries in the country, and heating and ventilating has entered a new and expanding phase. Each of the three companies has had its own specialized field, but their respective research, engineering, manufacturing, sales and service facilities supplement one another. The merger plan contemplates that the fifteen companies involved will retain separate entities under a holding company to be known as the Carrier Corporation, which will conduct all research and will direct sales and engineering activities for the group."

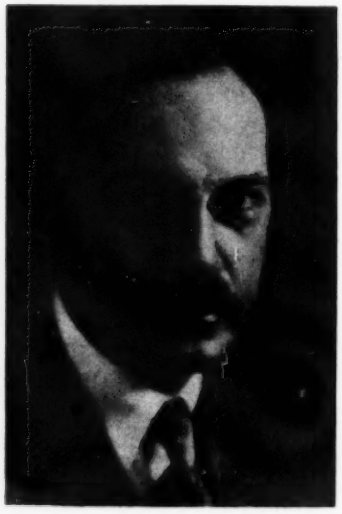
The Carrier Engineering Corporation was founded in 1914 by Willis H. Carrier, J. I. Lyle, E. T. Murphy, and five associates. Mr. Carrier, who is president of the company, developed his spray type of humidifier and dehumidifier in 1902, and soon thereafter followed his invention of the dewpoint control. Later he established a method of estimating fan system heating capacities and requirements on the B.t.u. basis. In 1911 he presented

W. H. Carrier, President, Carrier Engineering Corp.



J. W. Johnson, President, Brunswick-Kroeschell Co.

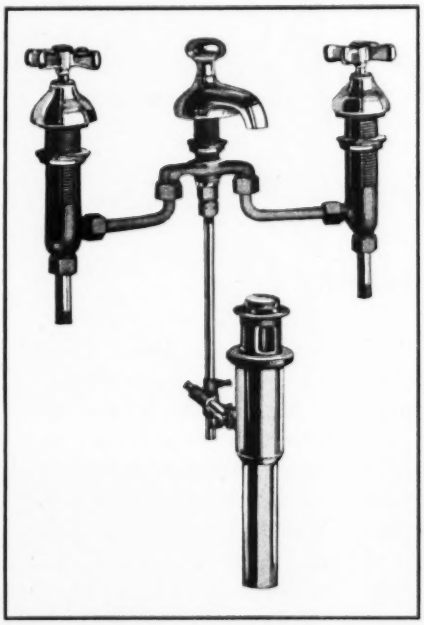
Thornton Lewis, President, York Heating & Ventilating Corp.



No grief is attached to the sale of a Chicago Faucet

"I have been buying and installing Chicago Faucets for nine years and am satisfied that they have helped me sell many a job. First, because of their mechanical superiority and beauty; secondly, because Chicago Faucet Co. advertisements have created a demand. There is no grief attached to the sale of a Chicago Faucet and after all is said and done, a satisfied customer is our best advertisement."

Michael Mele,
Mele Plumbing Service,
Chicago



Try a 462

"Mechanical superiority and beauty" help Mr. Mele sell many a job. Try a 462 Fixture the next time you install a lavatory. There isn't a prettier item anywhere and you'll find a quick endorsement from owner or architect—and a good profit, too.

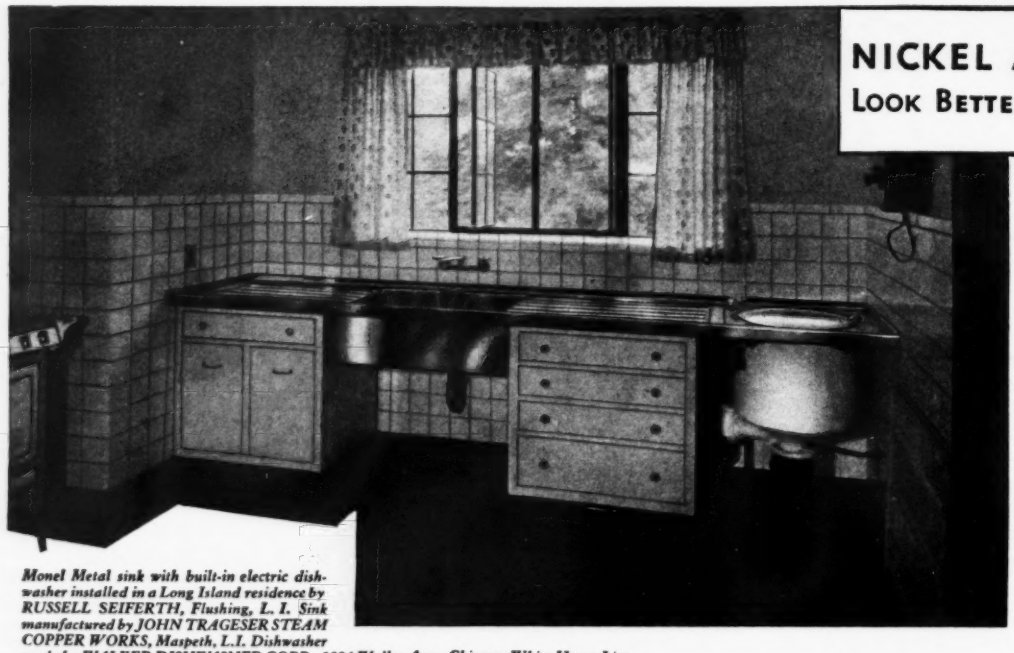
The Chicago Faucet Company,
2700-22 N. Crawford Avenue,
Chicago, Ill.

I've had enough grief on faucet fixing and would like to receive a copy of your new 76-page catalog.

Name .....

Address .....

CHICAGO FAUCETS



Monel Metal sink with built-in electric dishwasher installed in a Long Island residence by RUSSELL SEIFERTH, Flushing, L. I. Sink manufactured by JOHN TRAGESER STEAM COPPER WORKS, Maspeth, L.I. Dishwasher made by WALKER DISHWASHER CORP., 1024 Waller Ave., Chicago. White House Line Cabinets manufactured by JANES & KIRTLAND, INC., 101 Park Avenue, New York

1 *job*... 2 *profits*...

CUSTOM-BUILT *Monel Metal* SINKS *with built-in Dishwashers!*

HERE'S a modern idea that up-and-coming plumbers are converting into heavy cash! Custom-made, heavy-gauge Monel Metal sinks with dishwashers built right into the drainboards. Two jobs in one—and a worthwhile profit at both ends!

Here's the way it works! People who are prospects for a Monel Metal sink are also prospects for a dishwasher. They have money, live in good homes and usually buy the best. They are the "two-car" families of your community—the kind of folks who seldom balk at the "extras" when the extras are worth having.

Custom-built Monel Metal sinks are the ideal setting for built-in dishwashers—and are readily fabricated to accommodate all types of these modern appliances. Their silvery beauty harmonizes with and accents the dishwasher tub.

Use Monel Metal sinks as a lead to double sales. Remind your customers that "Nickel Alloys look better longer" and that Monel Metal is two-thirds Nickel.

Nickel gives Monel Metal its silvery, lifetime beauty, makes it immune to rust and highly resistant to corrosion. And Nickel gives Monel Metal its glass-smooth surface that is so easy to keep clean... so resistant to heavy impacts and hard wear.

Send for booklet, "Planning the Modern Kitchen", which also gives sources of supply for Monel Metal kitchen and pantry sinks.

Monel Metal is a registered trade mark applied to a technically controlled nickel-copper alloy of high nickel content. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

the psychrometric formula, and from this set up the psychrometric chart which has since been in general use by engineers in air conditioning calculations. One of his recent inventions was the centrifugal refrigerating system, which is used in conjunction with air conditioning systems in theatres and similar public buildings.

The Brunswick-Kroeschell Company is the outgrowth of the merger in 1922 of the Brunswick Refrigerating Company of New Brunswick, N. J., the Kroeschell Brothers Company, and the Kroeschell Brothers Ice Machine Company of Chicago, with plants in both cities. Besides a large business in institutional and industrial refrigeration, it does a large proportion of the marine refrigeration business in this country. In fact, its machines are now on more than 3,000 American vessels. It has one subsidiary, the Impex Corporation of New Brunswick, N. J. J. W. Johnson is president and Sydney B. Carpender is vice president and general manager.

The York Heating and Ventilating Corporation is a Philadelphia concern organized in 1919, with a plant located at Bridgeport, Pa., and developed unit industrial plant heating and cooling, and unit air conditioning. Like Carrier, the company has done a great deal in research work, and it has highly organized manufacturing and sales facilities. The principal officers are Thornton Lewis, president, H. P. Gant, vice president in charge of sales, and Donald E. French, vice president in charge of production. Mr. Lewis and Mr. Gant are both former presidents of the American Society of Heating and Ventilating Engineers, as also is J. I. Lyle.

◆

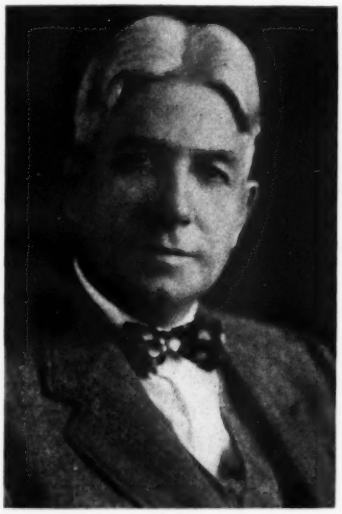
Appoints Representatives

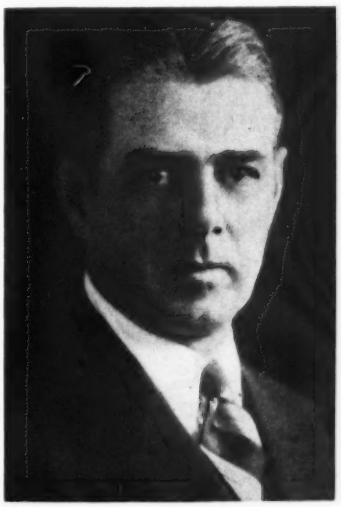
Derbyshire, Mack & Morgan, Inc., of Philadelphia, have been appointed representatives for Henry Weis Mfg. Co., Inc., of Elkhart, Ind., to sell this company's line of shower cabinets in the states of Maryland and Delaware, the District of Columbia, and that portion of the state of New Jersey south of and including Trenton; also, that portion of the state of Pennsylvania east of and including Altoona.

◆

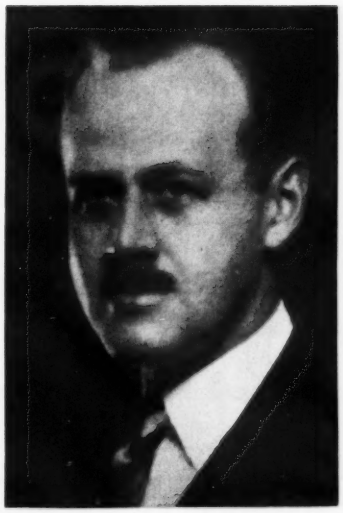
Chicago Oil Burner Association Meets

The Chicago Oil Burner Association held its regular monthly meeting and dinner on October 20. Tank manufacturers and distributors were guests.





Left: J. I. Lyle, executive vice president, Carrier Engineering Corp.; right: Sydney B. Carpender, vice president, Brunswick - Kroeschell Co.; bottom left: E. T. Murphy, Carrier Engineering Corp.; bottom center: Donald E. French, vice president in charge of production; and bottom right: H. P. Gant, vice president in charge of sales, York Heating & Ventilating Corp.



I KNOW A PLUMBER WHO SENT A MAN AROUND TO GET WORK!
WATDYL KNOW?
WONDER PEOPLE SHOULDN'T KNOW ENOUGH TO SEND FOR A PLUMBER!
IT'S GOIN' TO THE BOW-WOWS
YOU SAID IT!
AIN'T LIKE IT USED TO BE - YOU'VE GOT TO BE ON YOUR TOES
I CAN'T SEE THE SENSE OF RINGING DOOR BELLS
DOES IT GET YE ANYTHING?
AW! NUTS.
WISH I WAS IN SOME OTHER GAME!

You'll Hear a Lot of "Squawking"—but *The Wise Owls Are Business Getters!*

MY BOSS HIRED A YOUNG SOLICITOR AND HIS BUSINESS GREW 400%
MOST PEOPLE FORGET. THEY'LL THANK YOU FOR REMINDING THEM! MY BOSS DID!
THE DAYS OF WISHING FOR WORK ARE OVER
GO TO IT, THE REWARDS ARE BIG!
SEEMS DUMB NOT TO COMB YOUR NEIGHBORHOOD FOR NEW BUSINESS — EVERY OTHER SUCCESSFUL BUSINESS DOES!
I'D RATHER SNAP INTO A LOT OF NEW WORK BY CALLING, THAN LOSE IT BY NOT!
THE WISEST THING YOU EVER SAID

Your neighborhood is *your* green pasture!

The wise business man wastes not his time listening to the calamity howlers but *goes after* and *gets* the business. He knows that there is plenty of business for the business getter—if—he goes after it.

Live steamfitters and plumbers are using accessories, renewals and repairs to *replace* the profits lost by the building slump. They know that "X" Boiler Liquid is unequalled for rapid and satisfactory repairing for leaks in high and low pressure boilers, hot water systems and *heating plants fired by oil burners.*

"X" BOILER LIQUID is a service item for every home owner, industrial plant, hotel, etc., because it stops leaks and insures uninterrupted heating service.

It means real profits for you and extra profits by suggesting needed new equipment. "X" Boiler Liquid, therefore, leads the way to more and better business.

Ring the door bells in your neighborhood. Go out and get the business. This is 1930 — the Go-getters make the money.

ORDER A CARTON FROM YOUR WHOLESALER TODAY

"X" LABORATORIES — 25 West 45th St., New York, N. Y.

"X" LIQUID

Repairs Leaks in Steam and Hot Water Heating Systems, High and Low Pressure Boilers

Addison H. Beale, President of A. M. Byers Company, Dies in Chicago

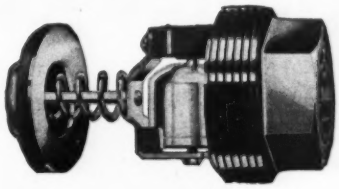
Addison H. Beale, president of A. M. Byers Company, Pittsburgh, Pa., died suddenly on October 28 at the home of one of his sons in Chicago while on a business trip to that city.

Mr. Beale's death occurred less than three weeks after the dedication of the Byers new plant—the last great mill construction program of the many he had undertaken. His stepping stone to recognition was the old Apollo Iron Company, from which he went with the

Addison H. Beale

American Sheet Steel Company at Vandergrift as open hearth superintendent. In 1905 he was made general manager of the Eastern Steel Company. Two and one-half years later the then American Sheet & Tin Plate Company recalled Mr. Beale to the position of district manager with supervision of plants at Vandergrift, Hyde Park, Leechburg and Saltsburg, Pa. In 1918 Mr. Beale joined the Mark Manufacturing Company where his first undertaking was the erection of the Indiana Harbor Mill. As district manager of the Mark Manufacturing Company, Mr. Beale had charge of all operations which included the ore mines in Minnesota, the coal mines in West Virginia, and the pipe mills in Evanston, Ill. During the last five years of this connection a merger took place and under the new organization Mr. Beale became vice president of operations and construction for the Steel and Tube Company of America. After leaving the Steel and Tube Company of America, Mr. Beale did consulting work for some of the largest banking and engineering organizations in the country. Later he accepted the position of president with The Lebanon Iron Company. In 1925 he went with A. M. Byers Company as president, starting on a large modernization program which culminated with the completion of the Byers new plant on October 8.

Mr. Beale was not a great club man although he belonged to the Duquesne Club, Pittsburgh Field Club and Oakmont Country Club. He was an active Mason, and a member of the Bellefield Presbyterian church. He was in his 62nd year at the time of his death, and his wife, two sons and a daughter survive him.



The only
AIR VALVE

1 That must be installed by a steamfitter.

2 That is inside the section and beautifies the radiator.

3 That can not be stolen or tampered with.

4 *That vents all the air from new type steam radiators.*

IN-AIRID
The Invisible **AIR VALVE**

We are so certain of the performance of In-Airid Air Valves that we do not hesitate to let them carry our guarantee. Just try them on one job, and you will become an In-Airid enthusiast.

The famous time-tested Airid is still the largest selling external air valve in the world, low in price, high in performance.

for Steam	for Vacuum
No. 1 In-Airid	No. 2 In-Airid
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40 WEST 40TH STREET, NEW YORK

ARCO ACCESSORIES MAKE ANY HEATING PLANT BETTER

HUNDREDS OF CLEAN EASY CUTS

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"BLUE BLADE"

MODERN ideas applied to the pipe cutter — at last!

A blade of thin super-steel with a keen cutting edge that out-cuts and out-lasts anything heretofore made to cut pipe.

It cuts many times as much pipe.

It cuts easily, clean cuts, practically without burr.

And when it finally wears, you take it out of the cutter as you remove a safety razor blade, and replace it with a new one.

Lower cost per blade—far lower cost per cut.

Examine this RIDGID cutter—try it on a piece of pipe. You'll see the difference promptly.

***Your Jobber has* RIDGIDS**

THE RIDGE TOOL COMPANY, Dept. DE., Elyria, Ohio

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PIPE CUTTER

Have you tried the new no-mar jaws in RIDGID yoke vises? Made for holding nickel pipe without damage. Ask your Jobber to show you.

RIDGID Wrenches

Housing guaranteed against break or warp. Nut in open housing easy to adjust. Can't lock on pipe. Powerful I-Beam handle with hang-up hole.

Also get your Jobber to show you the remarkable new RIDGID Die Stock with the one set of chasers which thread four sizes of pipe, any kind of pipe.

Central Supply Association to Continue Cost Study

William B. Talbott of Baker Mfg. Co., Kansas City, Mo., elected president at annual meeting — W. E. McCollum turns in resignation as secretary — proposal that five supply associations merge is tabled for present.

William B. Talbott, president

"I AM more and more convinced that it is just as easy to conduct a business on a profitable basis as to show a loss at the end of the year," remarked H. W. Seymour, vice president of Crane Co., at the thirty-sixth annual meeting of the Central Supply Association, held at the Palmer House, Chicago, October 29 and 30. The members of the association voiced this same feeling with a decision to continue, with added zeal, the analysis of the wholesalers' cost of doing business in the form of a survey for the year 1930. Brokerage sales, direct shipments, carload business, manufacturers' resale prices and selective distribution were discussed pro and con.

H. W. Seymour, first vice president

Roy G. Rom, of the Robert Rom Co., Milwaukee, summarized the results of the three preceding surveys. As an indication of their value, he explained that in 1927 only 41 per cent of the wholesalers reporting showed a profit; that in the following year 54.2 per cent of those who reported were in this class; and that in 1929 the figure mounted to 64.8 per cent. He remarked that the decrease in the volume of business this year made it more necessary than ever for jobbers to cut their expenses wherever possible, but that they could not do this without first having a definite knowledge of their costs.

Following some discussion,—a motion was adopted to the effect that wholesalers should segregate their brokerage sales from their total sales and approximate the gross margin on brokerage sales. I. Weil of Weil-McLain Co., Chicago, the sponsor of the motion, pointed out that many jobbers erroneously believe that their only expense on carload business is the billing. He remarked that the segregation of sales by these jobbers for the period of one year would prove to them to just what extent carload business pulls down their profit.

The feeling was expressed by several wholesalers, including W. H. Kiefaber of the W. H. Kiefaber Co., Dayton, Ohio, president of the association, that frequently the manufacturer, in suggesting resale prices, does not allow sufficient margin for the wholesaler. On the other hand, Harry Nelson of the Nelson Co., Detroit, Mich., for one, feels that resale prices are a good thing even though too low, for the reason that they offer something definite. It is his belief, that if properly organized, the jobber can eventually correct the situation.

H. W. Seymour of Crane Co., Chicago, reporting as chairman of the "special committee" announced the resignation of W. E. McCollum, secretary-treasurer of the Central Supply Association for the past six years. This committee, which was appointed for the purpose of selecting Mr. McCollum's successor, named Robert Macfee, secretary of the National Standard Parts Association, as its choice. Mr. McCollum's resignation becomes effective January 1, 1931, at which time Mr. Macfee will take over his new duties. Mr. McCollum, however, will continue to serve the association as advisory secretary until

July 1, 1931, after which he will be associated with the Manufacturers Clearing House, Inc.

New Officers Are Elected

William B. Talbott of the Baker Manufacturing Co., Kansas City, Mo., second vice president during the past year, was elected president of the association by a unanimous vote. H. W. Seymour, who served as first vice president during the term of President Kiefaber, asked to be relieved, and, consequently, was again elected first vice president. Frank S. Kaulback of the Standard Sanitary Manufacturing Co., Pittsburgh, Pa., was elected second vice president to fill the vacancy created by the promotion of Mr. Talbott.

Fred W. Swanson was re-elected national counsellor to the Chamber of Commerce of the United States. Martin Weil of Weil-McLain Co., Chicago, was elected delegate to the Plumbing and Heating Industries Bureau.

Mr. Macfee was named to serve as treasurer, after January 1, 1931, when he assumes his duties as secretary.

Fred W. Swanson, president and commissioner of the National Plumbing and Heating Institute, Inc., talked on the present status of the trade practice movement. The recent uncertainty of the federal trade commission in regard to certain phases of the trade practice movement and the effect of this attitude were described by Mr. Swanson for the first time. His address is given in this issue, starting on page 112.

F. S. Jefferies, manager of the New York Credit and Financial Service, gave an informative talk on credits which will be run in these columns in the next issue.

On a motion by A. B. Pierce of the N. O. Nelson Mfg. Co., St. Louis, Mo., it was voted to table for the present a proposal that committees from the Eastern Supply Association, Central Supply Association, Western Supply Association, National Pipe and Supplies Association and the National Plumbing and Heating Institute meet to discuss the advantages and disadvantages of merging the five associations into one national organization.

Harry Nelson felt that the subject was too important to pass by and that the sentiment of the membership should be learned. Mr. Pierce took the floor to state that the matter had previously been discussed and that it was not felt that business conditions warranted such a move at this time. He was supported in this viewpoint by William B. Talbott, and the motion carried.

The association adopted a resolution approving President Hoover's suggestion for a representative commission to study means for securing a more permanent stability of our economic structure, either through new legislation or through a more broad construction of legislation now standing, in full keeping with the needs of the times.

Executive Committee Report

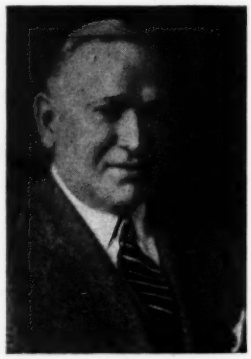
Secretary McCollum reported for the executive committee, which had met earlier, and put before the members its recommendation that the winter meeting be held the last Wednesday and Thursday of March, instead of earlier in the year as heretofore. The committee also recommended that eight sectional meetings be held in the territory covered by the association during the last half of January and the first half of February. Another recommendation by this group was that the membership directory be revised and published at an early date. Each of these recommendations were approved by the membership.

Four manufacturers were admitted to membership in the association, namely: The Brownell Co., Dayton, Ohio; Crist & Schilken, Pittsburgh, Pa.; Mueller Brass Co., Port Huron, Mich., and The Halsey W. Taylor Co., Warren, Ohio.

The following resignations were accepted: S. Wilks Mfg. Co., Chicago; Enterprise Plumbing Supply Co., Chicago; Ferguson Supply Co., Grand Rapids, Mich.; Kimball-Eisenberg Co., Detroit, Mich., and Newar Corp., Chicago.

"Net profit is the reward a man receives for engaging in business at his own risk. It is the premium he receives for good management. It bears no necessary relation to the amount of invested capital, but to the wisdom with which the business is conducted. Each wholesaler is entitled to a fair return on the capital invested, but he must earn it. Generally speaking, our association can be proud of the manner in which its wholesaler members have conducted themselves during the first eight months of 1930. Regardless of the depleted demand, our wholesalers have made the best of conditions. Where markets on any commodity have been disturbed the cause of the disturbance has usually been traced to the action of manufacturers who sought to increase their volume through special concessions."

—W. E. McCollum.



W. E. McCollum, secretary

Cites Failure of Manufacturers to Help Plumber Sell

E. L. Flentje, manager of the Plumbing and Heating Industries Bureau and recently appointed to succeed Fred W. Swanson on January 1, 1931, as commissioner of the National Plumbing and Heating Institute, Inc., addressed the gathering on the need of closer co-operation between wholesalers and contractors and manufacturers and contractors to create a demand for up-to-date plumbing and heating equipment in old buildings.

As an indication of the lack of co-operation in some quarters, Mr. Flentje cited the experience of a master plumbers' association in the northern part of

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A COMPLETE LINE

Perfection Floor and Ceiling Plates have long been established in the trade because of their undoubted superiority.

The line is exceedingly complete. In addition to the nickel plated and polished brass finishes, Perfection Plates can also be furnished in satin, aluminum or grain oak finish.

No matter what you need there is a particular and proper type Perfection Plate to fill your want.

Ask your jobber to show you Perfection Plates the next time you visit him.

No. 2

No. 6
Split Cast Plate

No. 6-A
Solid Cast Plate

No. 3
Solid Cast with set screw

No. 40

No. 16 for Angle Circle Cove

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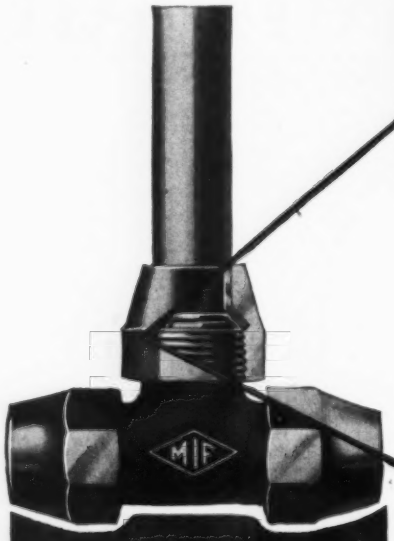
The Original No. 10 Perfection Floor and Ceiling Plate

Back View

LOOK FOR OUR CATALOG IN PLUMBING & HEATING CATALOG

The
BEATON & CADWELL MFG. CO.
Established 1894
NEW BRITAIN, CONN.

COPPER TUBE FITTINGS



BUILT TO STAND THE STRAINS AND SHOCKS

The hundreds of strains and shocks that any plumbing line is subjected to, many times makes itself most evident at the fitting.

This is particularly true of copper tube plumbing. As a consequence, the greatest precaution must be taken to overcome this difficulty.

Two Point Contact in M. I. F. Copper Tube Fittings make these fittings leak, strain, shock and pull proof. They are sturdily made yet not so heavy or bulky as to be unwieldy and behind their trim appearance lies the strength to hold for all time.

Ask your jobber to show you an M. I. F. Copper Tube Fitting. Or write us for the information you need to show you why they are superior in every way.

MALLEABLE IRON FITTINGS CO.
BRANFORD CONN.

the state of Illinois. This association, being sincerely interested in the modernization movement and desirous to secure the maximum volume of business from this field, wrote to 450 manufacturers who served the territory, asking for any assistance or suggestions that these manufacturers had to make in regard to securing this kind of business.

Of the 450 manufacturers who were asked to lend their assistance, and Mr. Flentje emphasized the fact that no money was asked for, only three of them replied. Two of these referred the association to the bureau, while the third made a sincere attempt to help the association members by suggesting a method for going after remodeling work.

Continuing, he stressed the point that the master plumber wants information—not inspiration, and reminded his audience that the plumber has a background of 300 years as a mechanic. Mr. Flentje said that the bureau's regional management conferences are giving the plumber definite ideas on how to improve himself, and that the jobber is overlooking an unusual opportunity if he does not use the conference as a means of creating a closer bond between himself and the contractor.

A feature not ordinarily found at meetings of the Central Supply Association was the program presented by the Plumbing and Heating Industries Bureau, illustrating the type of work which that organization is doing through its regional management conferences. The program was in the form of a short play, the purposes of which were to demonstrate the superiority of dramatizations over speeches. The skit was well acted and while of necessity considerably shorter, gave the manufacturers and wholesalers present a good idea of what the bureau is doing in its conferences. To date, the bureau has held twelve of these conferences, with a total attendance in the neighborhood of 2,500 persons.

President Kiefaber said he was sure the bureau has hit upon a splendid plan and he urged the wholesalers to work for a conference to be held in their own cities.

The Opening Session

The meeting was formally opened by President Kiefaber, who after welcoming the members, touched briefly on the business situation. He said that while all business is suffering at this time, the building industry stands at the top of the list for lack of volume. Mr. Kiefaber feels that little in the way of volume can be expected during the remaining months of the year. He remarked that the price situation has also been unfavorable, and that without the co-operation which has been had from the manufacturers the situation would be even worse.

Cultivation of the modernization field was urged by President Kiefaber as a means of helping to bolster volumes, and he feels that this type of business offers a splendid opportunity. He stressed the value of the trade practice rules and referred to time payment selling as something that is here to stay. He expressed the belief that the worst of the business depression is past and that the next turn will be for the better.

Will Make 1930 Cost Survey

The question as to whether or not the association should make a study, the same as in the past three years, on the cost of doing business, was brought up at the wholesalers' group meeting on Wednesday afternoon. At the same time the manufacturer members met separately to discuss their problems.

Roy G. Rom, who opened the discussion, said that the birth of the idea was found in the old boxing and cartage question, which resulted in the Harvard University report, in 1927. As an indication of the wholesalers' interest in the subject, he pointed out that the number of firms reporting in 1929 showed an increase of 38 per cent over 1928.

As an indication of the value of the cost studies, Mr. Rom explained that of the firms reporting in 1927, only 41 per cent showed a profit; in 1928, 54.2 per cent of those reporting showed a profit, while in 1929 the percentage amounted to 64.8.

A comparison of the 1927 and 1928 surveys, both of which were based on the same 157 wholesalers,

Robert Macfee, named to succeed W. E. McCollum as secretary-treasurer of the Central Supply Association, effective January 1, 1931, is at present secretary of the National Standard Parts Association, which is composed of some four hundred manufacturers and wholesalers of automobile

Robert Macfee

parts. Mr. Macfee has had a wide experience in business and also as an association executive. He has helped organize and has served on numerous committees. He will assume his new duties the first of next year and to begin with will be assisted by Mr. McCollum, who will serve in the capacity of advisory secretary, until July 1. After July 1, Mr. McCollum will become associated with the Manufacturers Clearing House, Inc.

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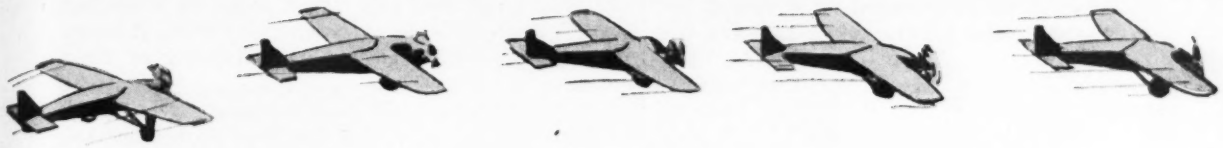

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If you install . . . or want to install . . . suspended type heaters in stores, showrooms, garages, factories, offices, warehouses and other places, don't fail to get all the interesting facts about Sturtevant Speed Heaters.

Just fill out and mail the handy coupon to the nearest Sturtevant office listed below . . . for either or both of the helpful booklets illustrated . . . or to request our local sales cooperator to call.

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☐ Mail "Complete Data" Speed Heater Catalog
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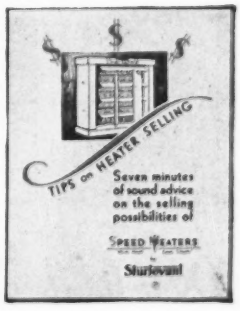

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The reasons and the results will be evident from the following two typical cases.

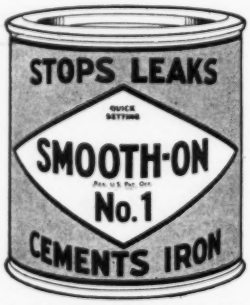
Get SMOOTH-ON *No. 3 in 1-lb. or 5-lb. tin or 25-lb. steel keg, from any supply house or from us direct.*

"In ammonia work, Smooth-On No. 3 is much more practical than litharge and glycerine. I used Smooth-On No. 3 on every threaded joint on the ¼-in. to 2½-in. ammonia pipes in our 20-ton ice manufacturing plant. In the initial test not one leak developed in these threaded joints, although leaks were found in joints welded with acetylene. Now after over a year, every visitor comments on the absence of the ammonia odors which are so prevalent in similar plants."

Cracks in ammonia pipes or containers can be sealed equally well by using Smooth-On No. 1, as evidenced by the following experience of the Engineer of a large Chicago apartment house:

"One of our ammonia expansion coils opened along a seam for a length of about 6 in. We scraped out this crack, tamped it full of Smooth-On No. 1, and one hour later tested the coil under air pressure of 120 lb. per sq. in. It held perfectly, and in service expansion and contraction of the metal has had no effect on the repair. The job cost $2.00 for labor and 5 cents for Smooth-On No. 1, and saved the coil. A new coil plus the labor cost of changing would have been at least $60.00."

Smooth-On prevents or stops leaks of steam, hot or cold water, thin oil, gas, chemical solutions, etc., and holds on any metal when applied in accordance with directions in the Smooth-On Handbook.



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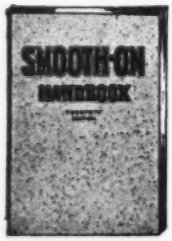

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revealed a decrease in volume for 1928 over the preceding year, but at the same time a better profit. Mr. Rom attributed this larger profit on a smaller volume to the cutting of expenses by these jobbers, made possible by a clearer understanding of their costs.

He feels that the 1930 survey will be exceptionally valuable because of having the three preceding ones as a background. He pointed out that the compilation of this information by the wholesaler does not necessitate any unnecessary work, as the same data will be helpful in making out the federal income tax.

I. Weil expressed the opinion that the cost survey has done all jobbers much good, and that it has educated each to try and get a better profit. Mr. Weil remarked, however, that even the most perfect cost system is useless to a jobber when an outsider comes into his territory and tries to break the market. He feels that the manufacturer should interest himself in such a practice.

Secretary McCollum said that the wholesaler members of the Central Supply Association have gone further than any other group of jobbers in studying costs; and emphasized the necessity of applying the information that has thus been acquired to their businesses. He warned his hearers that they must prepare for the seasonal drop in business that can be expected in November, December and January, adding that business secured during this period should still be taken at a profitable basis.

A motion approving the cost survey work done by the association in the past and insisting that this work be continued was unanimously adopted by the association.

The Segregation of Brokerage Sales

M. J. O'Fallon of Crane-O'Fallon Co., Denver, Colo., asked for a discussion on the segregation of brokerage sales from regular sales.

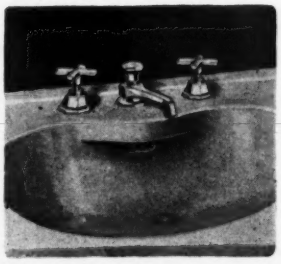
President Kiefaber stated that without segregating these sales it was impossible to tell whether or not the manufacturer was allowing the jobber sufficient margin.

I. Weil remarked that those wholesalers who are of the belief that all they have to do on carload business is bill it would learn differently by segregating their sales. He said that following this practice for the period of a year would prove just how much carload business pulls down profits.

J. P. Frey of the Central Supply Co., Minneapolis, Minn., asked those jobbers to rise who segregate their sales. A count showed that few of those present followed this practice.

Mr. Kiefaber took the occasion to say that the only difference between carload business and out-of-stock business is that no warehousing expense is connected with the former. He said that all other items of expense except this must be included when billing carload business.

Carload business, according to W. J. Spillane of James B. Clow & Sons, Chicago, is the curse of the industry, it being his opinion that it kills the jobbing business. Mr. Spillane said that while he recognized that certain jobs require carload quantities,



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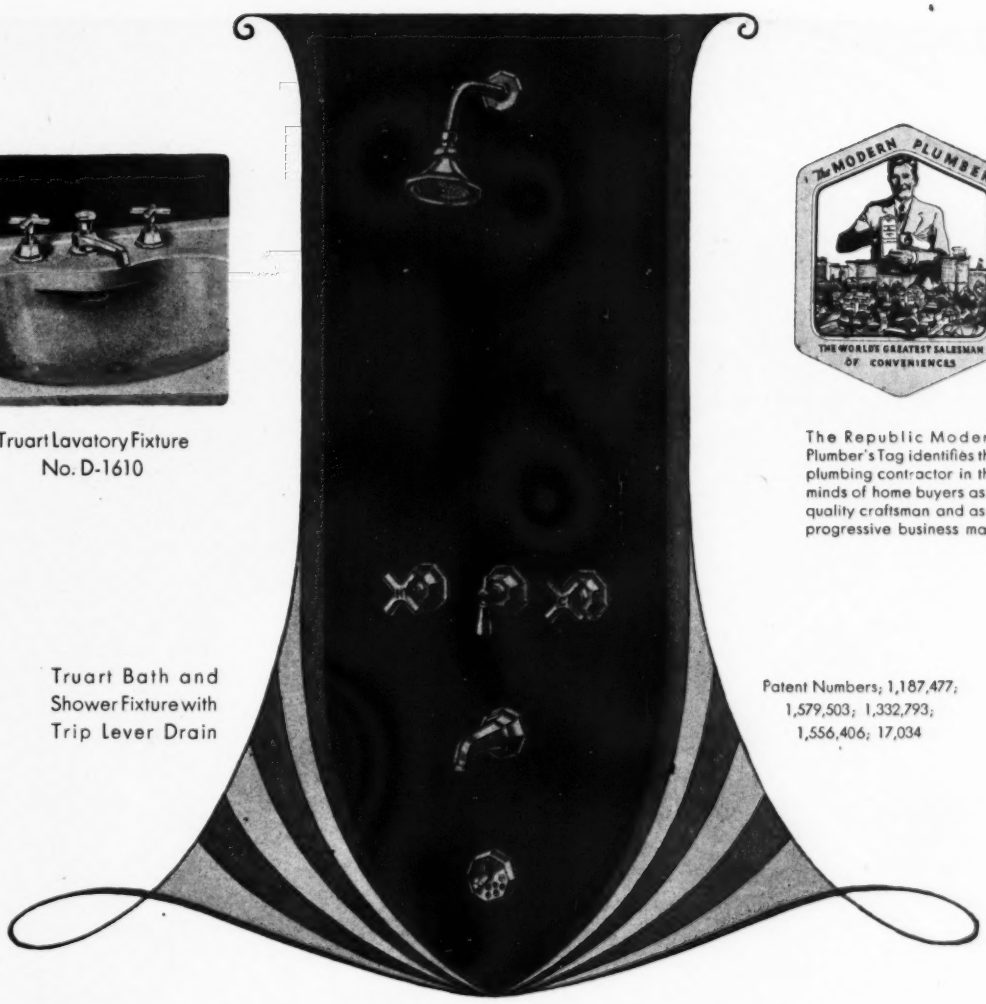
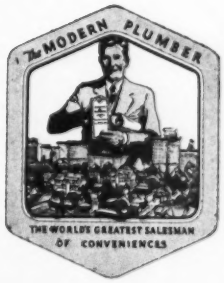


Truart Bath and
Shower Fixture with
Trip Lever Drain



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THE enduring beauty of Republic Fixtures—expressed in grace of line, symmetrical proportions, harmonious balance, and lustrous finish—is a powerful aid in closing contracts. ⋈ The enduring service rendered by Republic Fixtures—the responsive valves and unfailing performance—is a powerful aid to you in building good-will; in winning a reputation for fine craftsmanship. ⋈ Ambassador! Onawall! Nubian! Truart! Each one a fixture that offers sales-compelling beauty plus reputation-building quality.

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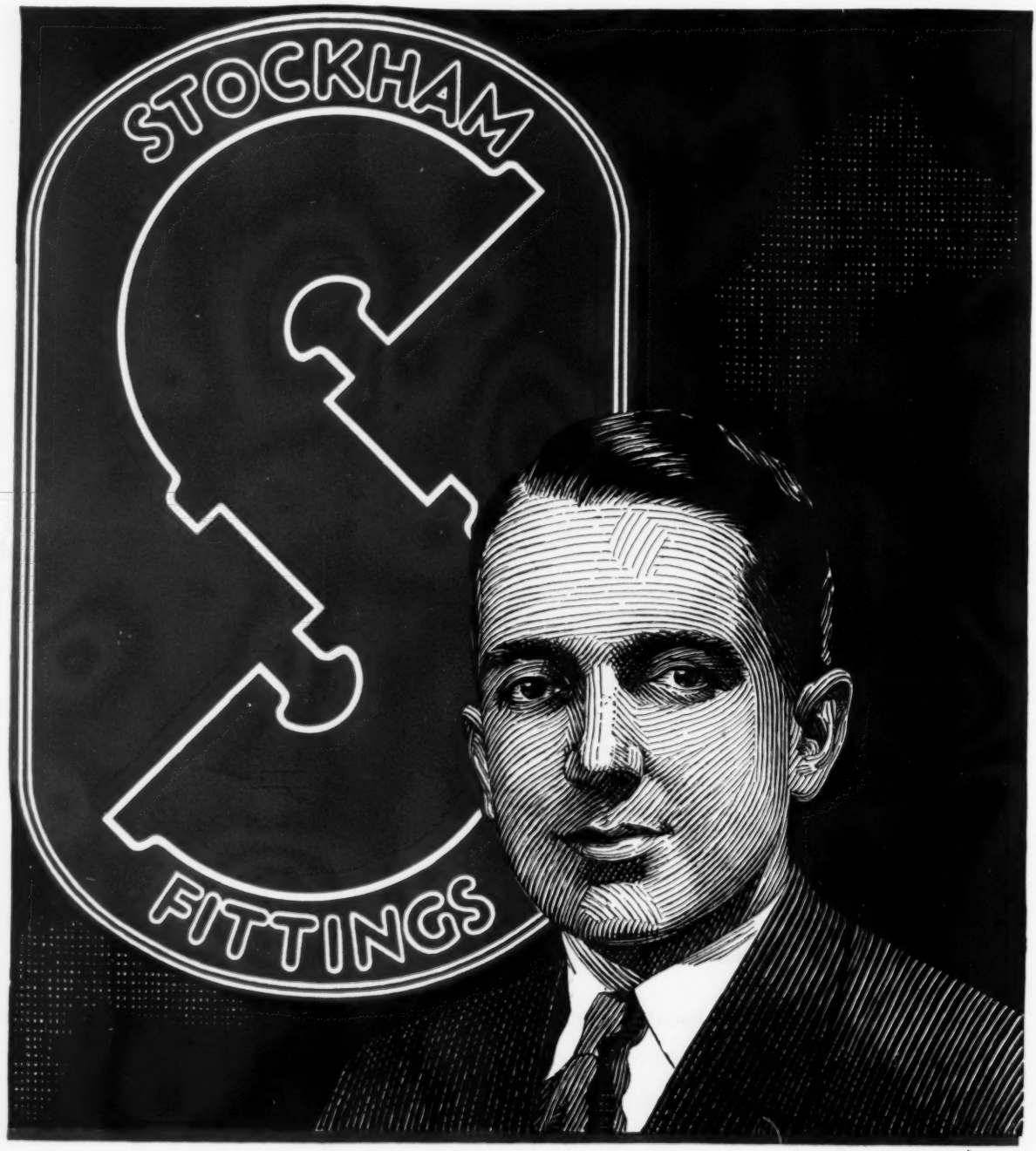
CLEVELAND, OHIO

REPUBLIC BRASS GOODS



DISTRIBUTION is the answer to both the cost and the economy of a product. Distribution is a matter of human relations. Just as the founder established a simple creed for both manufacture and distribution—so his sons carry on that same basis of working, on more widespread lines.

Douglass W. Stockham finds willing reflection, both in the Stockham organization itself and in its nation-wide group of distributors, of the simple creed of his father—to contribute honestly and sincerely to the greater efficiency, convenience and therefore prosperity of his fellow-man,—a human ambition perpetuated by a human organization.

STOCKHAM PIPE & FITTINGS CO., *Birmingham, Ala.*

this type of business too often is the result of pool buying.

Harry Nelson of the Nelson Co., Detroit, Mich., feels that the jobber owes it to the manufacturer to secure a fair share of business from the territory in which he represents the producer. It is his belief that the only way jobbers can get a better margin on carload business is for them to become better organized, and thereby put themselves in a position where they can tell the manufacturer what they need.

Mr. O'Fallon expressed the opinion that the jobber is entitled to a minimum of 10 per cent on all carload business.

At the instigation of Mr. Weil, a motion was adopted to the effect that wholesalers should segregate their brokerage sales from their other business.

Speaking from the standpoint of a manufacturer, I. Weil said that his firm was heartily in favor of selective distribution. He said that his firm adopted the policy because they realized (from their experience as jobbers) that the products of most manufacturers were handled by too many distributors in the same territory. He feels that selective distribution gives the manufacturer better customers.

The Manufacturers' Meeting

H. W. Seymour, reporting on the manufacturers' group meeting, said in part: "The soil pipe, plumbers' brass goods, range boiler and fittings groups all stated that conditions in their industries were good.

"For some unknown reason, the enameled ware group made a lot of noise by their silence.

"But the boiler and radiator group stated that the industry was well stabilized—on the bottom.

"Mr. Jefferies of the New York Credit Bureau, addressed the manufacturers and said that if the credit situation throughout the country were placed on a satisfactory basis, it would eventually mean profits for the entire industry.

"Another subject discussed was that of future contracts and the question of protecting orders for wholesalers' stocks. We hear terms of 2 per cent for 10, or 30 or 60 days, all the way up to six months, which, of course, means nothing more nor less than a cut price. The jobber who is able to discount his bills and take the 2 per cent premium for prompt payment is seriously handicapped by the manufacturer who extends six months' credit to the jobber. The question of future orders and the protection of orders for jobbers' stocks was brought about by the new terms distributed by enameled ware manufacturers and it was thought to be a constructive move.

"The message I got out of this entire meeting yesterday was the fact that where you have co-operation, whether it be from a manufacturing group or your local wholesaler group, the question of profit and loss resolves itself into whether or not you have this co-operation. Co-operation brings profit—lack of it brings no profits. I am more and more convinced that it is just as easy to conduct a business on a profitable basis as to show a loss."

The New Executive Committee

The executive committee for the ensuing year will be made up as follows:

PRIZEWINNERS OF DOLE VALVE CONTEST

Judges for this first in the series of six coloring contests, conducted by The Dole Valve Company, 1925 Carroll Ave., Chicago, were—*Editor of Domestic Engineering; Representative of the Plumbers Trade Journal;* Two artists—*Mr. Ellsworth Young* and *Mr. Edw. T. Grigware.*

Three more coloring contests will appear in the pages of this magazine between now and February, 1931, and hundreds of cash prizes will be awarded.

Also an extra cash prize of $100 for the best series of six submitted in accordance with the rules.

The contest is open to anyone, anywhere.

FIRST PRIZE, $50.00

Elmer F. Schwenck
821 Hillgrove Ave.
LaGrange, Illinois

SECOND PRIZE, $25.00

Pauline R. Hill
184 Whitman St.
New Bedford, Mass.

THIRD PRIZE, $15.00

Annabel Hodges
139 Dalzell St.
Shreveport, La.

FOURTH PRIZE, $10.00

Joy Chevalier
3315 E. Tenth St.
Long Beach, Calif.

FIFTY CONSOLATION PRIZE WINNERS

Leta G. Sanborn
208 West Elm Street
Cherokee, Iowa

Ralph Wolf
207 East 85th Street
New York, N. Y.

Louis Friday, Jr.
1825 Kensington Rd.
Toledo, Ohio

Marion Herbes
Grayslake, Ill.

Mavis Deeves
2409 33rd St. S. W.
Calgary, Alberta, Canada

Grace Caldwell
1919 Memorial Ave.
Williamsport, Pa.

Marian E. Lota
58 Auburn Rd.
West Hartford, Conn.

Dorothy Davis
40 Cross St.
West Newton, Mass.

Billy Roork
4531 Sansom St.
West Philadelphia, Pa.

Lorraine Peters
R. R. No. 4
Frankfort, Ky.

Clara Armstrong
491 N. Park St.
Columbus, Ohio

Louise Harmony
Cockeysville, Md.

Chestine Kendall
Box 169
Jacksonville, Ill.

Leone Miner
Bethesda School, Chestnut Hill, Philadelphia, Pa.

Arved M. Larsen
63 Cherry Street
Washington, N. J.

Stella Puk
197 Metropolitan Ave.
Brooklyn, N. Y.

William Oscar Hvarven
1308 Florence Ave.
Galesburg, Ill.

Betty Belle Tholen
7530 Parkdale Ave.
Clayton, Mo.

Helen Frances Jones
205 S. Main St.
Pinckneyville, Ill.

Ranice W. Birch
519 E. 30th St. North
Portland, Oregon

Mae McNerney
1113 Wyandotte St.
Kansas City, Mo.

Theresa Goulet
9 White Street
Haverhill, Mass.

Marie F. Mulgrew
20 River St.
Arlington, Mass.

William C. Scott
525 S. Harvey Ave.
Oak Park, Ill.

T. E. Prather, Jr.
232 E. Huron St.
Chicago, Ill.

Claire Arnold Hvarven
1308 Florence Ave.
Galesburg, Ill.

Hilda Carroll Keen
4528 S. Rocheblave St.
New Orleans, La.

Jean K. Reboli
549 52nd St.
Oakland, Calif.

Frances Kirwan
374 Manhattan Ave.
Union City, N. J.

William Rauckhorst
824 May St.
Akron, Ohio

John Cawley, Jr.
41 Front St.
Pittston, Pa.

Geneva Rigsby
1625 Cleveland St.
Augusta, Ga.

Lillian Chase
Howard Avenue
Wenham, Mass.

Margaret Andrews
304 Central Ave.
Charlotte, N. C.

Mildred C. Schwenck
821 Hillgrove Ave.
LaGrange, Ill.

Lonnie L. Stephenson
2627 Darien St.
Shreveport, La.

L. M. Moloney
c-o Mrs. McGuirk
86 Worthen St.
Lowell, Mass.

Wayne Opdyke
c-o A. M. Larsen
63 Cherry St.
Washington, N. J.

Peggy Burns
504 N. Main St.
Wallingford, Conn.

Rita Florent
10 Felton St.
New Bedford, Mass.

Fay McDuffee
149 S. Third St.
Memphis, Tenn.

W. E. Dimpelfeld
824 Browns Ave.
Erie, Penna.

Catharine Hinton
712 N. VanNess Ave.
Fresno, Calif.

Alice Ruppert
198 Allyn St.
Holyoke, Mass.

H. Lucille Nelson
594 S. Smith Ave.
St. Paul, Minn.

Weston Wendling
1845 S. 25th
Lincoln, Nebr.

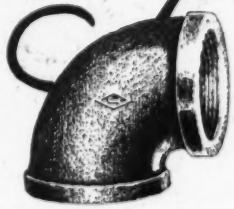
Harry M. Zepp, Jr.
89 Liberty St.
Westminster, Md.

Lucille M. Couture
1016 Marquette Ave.
Bay City, Michigan

P. Burns
934 Edgecomb Place
Chicago, Ill.

Maggie J. Trisler
507 North East St.
Kewanee, Illinois

Jarecki Fittings



Have Perfect Threads

When one of the world's leading manufacturers of threading equipment turns out a threading job—that job may usually be depended upon to be an unusually efficient job. That is one reason why "old timers" specify Jarecki Fittings.

There are many other reasons. Jarecki Malleable Fittings are free from coke impurities; Jarecki Cast Iron Fittings are exceptionally close grained and free from defects. You can count on Jarecki Fittings to speed up production jobs and stand up under years of service.

Jarecki
MANUFACTURING COMPANY
ERIE, PA., U. S. A

EVERY

needs

EXCELSO INDIRECT

WATER HEATERS

EXCELSO Indirect Water Heaters will operate on any steam or vapor heating boiler, furnishing an unlimited domestic hot water supply at practically no cost as long as the boiler is being fired.

The principle of operation is simple. Hot water from the heating boiler flows around the removable copper coil inside of the EXCELSO Heater, in turn heating the domestic water supply which flows through the coil and into the storage tank. By thus utilizing the same fire that heats the building for this additional purpose, the cost of supplying hot water for all tap needs is practically nothing.

EXCELSO Indirect Heaters are equipped with removable copper coils with patented ground joint brass connections; exclusive with EXCELSO. The water being heated comes in contact with copper and brass only, and is therefore free from rust and contamination. By the elimination of all gaskets the chief cause of leakage has been done away with. For this reason an EXCELSO Indirect Water Heater will function faithfully year in and year out without repairs, care or attention.

The EXCELSO story as outlined above is a simple one—but one which will produce exceptional profits for plumbing and heating contractors. Tell it wherever you find a steam or vapor heating plant, whether in new buildings or old, large buildings or small, and you'll create many worth-while jobs. There is a size EXCELSO to heat water for one family or one hundred families—or more. No building is too large for EXCELSO.

EXCELSO

TRADE MEMBER

this team in his business

THE NEW EXCELSO Klearway Valve replaces the two gate valves and draw-off cock recommended by most water heater manufacturers as necessary to provide for the effective cleaning of rust and sediment from the hot water supply system.

Installed at the low point in the system's piping, it allows for the positive cleaning of both the feed line and the heating unit. A quarter turn to left and then to the right of the operating position cleans first the tank side of the system, then the heater side. Water pressure forces the sediment from all points. There is no following the path of least resistance as occurs when an ordinary draw-off cock or hose bib is used.

The EXCELSO Klearway Valve also offers an important new safety feature. When the valve is not in the operating position, water will always flow from the hose connection. There is, therefore, no possibility of accidentally leaving a heater circulating line valved off.

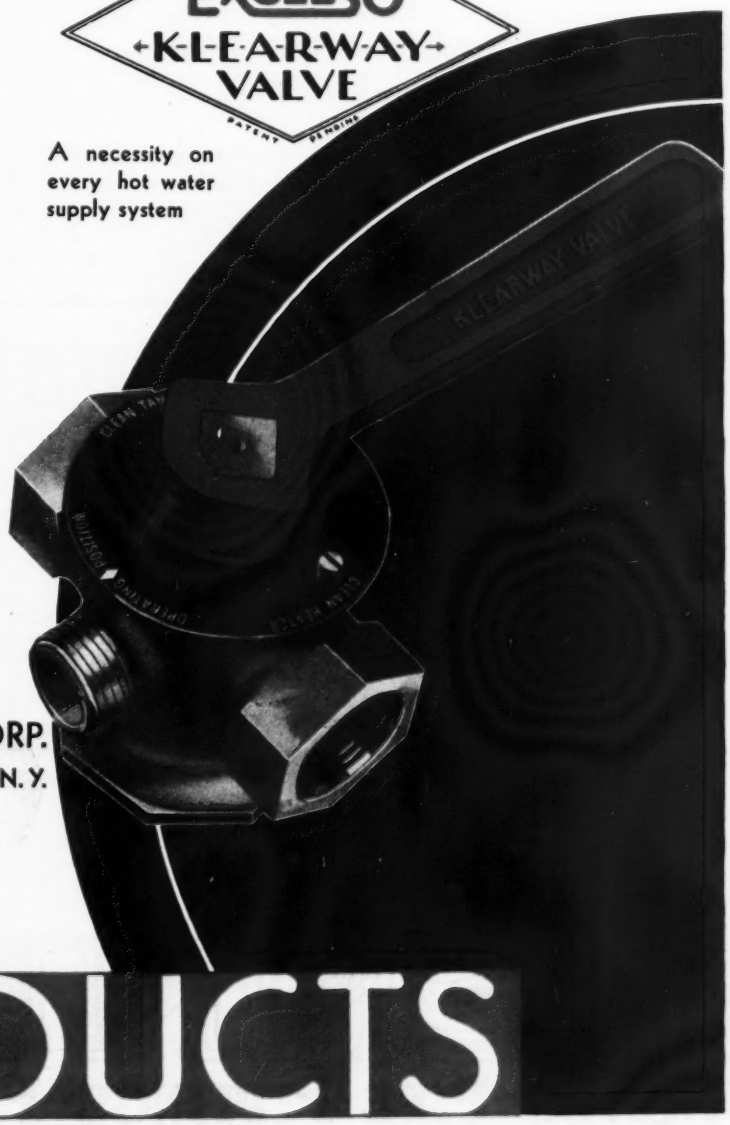
The new Klearway Valve increases profits by simplifying installations and saving pipe fitting, cutting and threading. Directions for its operation are contained on the face of the valve itself, making it clearly understandable to the owner who will appreciate the advantages of Klearway.

The EXCELSO Klearway is not "just another valve." It is an indispensable unit and a guarantee of clean hot water, as well as efficiency of operation of any water heating installation.

New EXCELSO K-L-E-A-R-W-A-Y VALVE

PATENT PENDING

A necessity on every hot water supply system



Made in ¾" and 1" Sizes

Excelso Heaters and Klearway Valves are stocked and sold by leading wholesalers and boiler and radiator manufacturers everywhere.

EXCELSO PRODUCTS CORP.

65 Clyde Ave. Buffalo, N. Y.

PRODUCTS

Pennsylvania—W. B. Bryar, Bailey-Farrell Mfg. Co., Pittsburgh.

Ohio—George J. Jones, Crane Co., Cincinnati. Alternate, F. W. Terwilliger, American Plumbers Supply Co., Toledo.

Indiana and Kentucky—C. C. Weiland, Central Supply Co., Indianapolis. Alternate, R. E. Bower, the P. & H. Supply Co., Fort Wayne.

Michigan—S. F. Morris, Detroit Lead Pipe Works, Detroit. Alternate, Edwin Sterner, Edwin Sterner Co., Flint.

Northern Illinois—W. J. Spillane, James B. Clow & Sons, Chicago. Alternate, J. F. Carroll, Standard Sanitary Mfg. Co., Chicago.

Wisconsin—B. Hoffmann, Jr., B. Hoffmann Mfg. Co., Milwaukee. Alternate, Roy Cordes, Cordes Supply Co., Milwaukee.

Minnesota—Charles S. Weaver, Peerless-Northern Co., St. Paul.

Iowa—F. N. Kretschmer, Kretschmer-Tredway Co., Dubuque.

West. Missouri and Kansas—E. H. Graham, Crane Co., Kansas City. Alternate, H. B. Holihan, Missouri Water & Steam Supply Co., St. Joseph.

East Missouri and So. Illinois—T. R. Taylor, Crane Co., St. Louis.

Nebraska—W. T. Cotter, Crane Co., Omaha. Alternate, J. Cass Cornell, U. S. Supply Co., Lincoln.

Colorado and Utah—J. R. Pettit, Mountain States Supply Co., Salt Lake City. Alternate, M. J. O'Fallon, Crane-O'Fallon Co., Denver.

Oklahoma—D. W. Holmes, Plumbers Supply Co., Tulsa. Alternate, Joseph Mideke, Jr., Mideke Supply Co., Oklahoma City.

Texas—C. A. Dunlay, Dunlay-Armand Co., Inc., Houston. Alternate, W. G. Higgins, Standard Sanitary Mfg. Co., San Antonio.

Louisiana—Louis L. Warden, Standard Sanitary Mfg. Co., New Orleans.

Tennessee—R. T. Clarkson, R. T. Clarkson Co., Memphis. Alternate, N. J. C. Lester, C. M. McClung & Co., Knoxville.

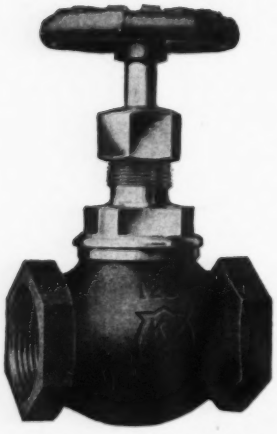
Alabama, Georgia and Florida—C. B. Wilson, Horne-Wilson, Inc., Atlanta. Alternate, J. G. Johns, Crane Co., Birmingham.

Reports on Federal Resale Legislation

Frank Collins, president, Toledo Pipe Threading Machine Co., Toledo, Ohio, reported as follows on the progress of federal resale legislation:

"Through the co-operation of the American Fair Trade Association we have been able to enlist many other industries in our work for resale price legislation. The drug trade, finding that they were faced by serious inroads through the chain store companies have enlisted in our behalf and are giving us vigorous help. The grocers, through the national association of independent grocers, finding the inroads into their independents through the chain store movement, have now come to our assistance. The jewelry trade, due to the fact that numerous items of jewelry are being sold through the general department stores,

Globe and Angle Valves



THESE valves are built with usual Kennedy carefulness. The design and construction are such as to insure perfect proportions, giving weight where weight is necessary for strength. All valves are thoroughly tested for strength and for perfect operation of parts before leaving the factory.

As in all the Kennedy products, only the best of materials are used. These valves are of bronze throughout, with stems of special bronze of 50,000-lb. tensile strength.

Send for the Kennedy Catalog

THE KENNEDY VALVE MFG. CO. ELMIRA, N.Y.

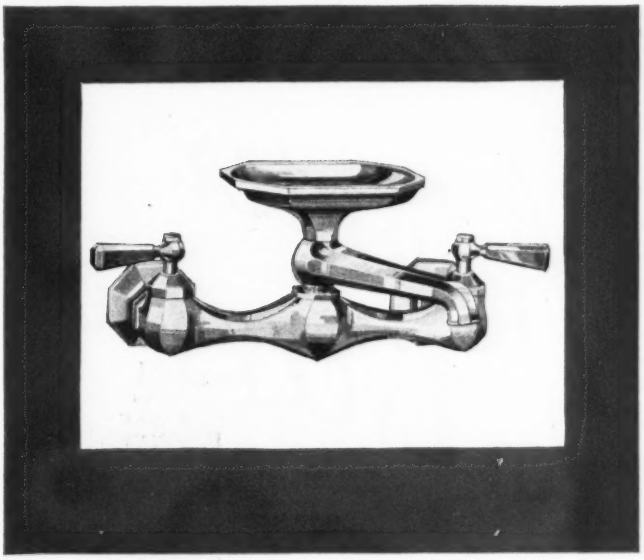
WAREHOUSES: New York, 128-132 White St.; San Francisco, 448-450 Tenth St.; Chicago, 1335-1337 South Clinton St.

SALES OFFICES: New York, Philadelphia, Cleveland, Salt Lake City, El Paso, Chicago, San Francisco, Los Angeles

KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

When Mueller
"ARTCRAFT"
comes to the kitchen



Beauty helps the housewife

The Mueller Octagon Type Combination Sink Faucet in the new ARTCRAFT line is a striking example of what Mueller is doing to beautify the commonplace plumbing fixture.

In it you have all the proved mechanical excellencies, all the laboratory controlled materials such as "Mueller bronze for the vital spots" — PLUS a new beauty that captivates the woman's heart.

She immediately feels proud of her kitchen when it is equipped with this new fitting. She takes pleasure in displaying it to her friends. In fact she will tell them it is easier to do her housework with beautiful things.

The rich chromium plating and the artistic lines of this fitting will add beauty to any kitchen. The inherent quality will give years of unfailing, dependable service.

Write to us for full information. It will be cheerfully sent. No obligation, of course.

MUELLER CO. (Est. 1857) Decatur, Illinois. *Branches:* New York, Dallas, Atlanta, San Francisco, Los Angeles, Chicago. *Canadian Factory:* Mueller, Limited, Sarnia.

MUELLER

PLUMBING BRONZE AND VITREOUS WARE

A heater for Every job

15 to 1000 gal. capacity. Side-arm or internal combustion type as shown.

Every time you sell an OHIO *Automatic* Hot Water Heater you do three people a favor—Your *Customer*, Yourself and US. New low prices make OHIO sales easier to get too

Write us for details

Address
The Ohio Heater Co.
Columbus, Ohio
Manufacturers of the famous

OHIO
Automatic
WATER HEATER

"NO FINER WATER HEATER BUILT"

have become interested in helping us. Therefore, all of the various industries of any size are holding joint meetings of the retail branches through the co-operation of the national secretaries.

"In addition to that, where there are retail merchants' associations, their co-operation is also being enlisted to the extent that next December they are going to snowstorm congress. You will perhaps be interested to know that we had a very serious time in getting the rule which is necessary to bring a bill upon the floor of the House. We were fought by the large department stores and by the national dry goods association, and I presume the large chain stores. Being large advertisers, they were able in a great many cases to sway the situation. However, we got the rule just before congress adjourned. We are promised that it will be the first piece of new business to come upon the floor of congress in December. It is your duty, not now, but as soon as congress convenes, to write your local congressman and also your senators and urge upon them the necessity for the enactment of the Capper-Kelly bill. If you do it now, they will forget about it, and that is why I say, do it about the first day of December."

Make Credit Recommendations

D. R. Thomas, Central Western Credit Association, reported as follows on the meeting of the credit bureau secretaries:

"Our bureau in the Twin Cities has been in existence for more than twenty-two years. What Mr. Swanson and Mr. Jefferies have said of the manufacturers is certainly true of the wholesalers. If there ever was a time in the history of this industry when more care should be used in the extension of credit than at present, I would like to know when.

"The secretaries have asked me to present to you a brief resume of what we did last night.

"These are the recommendations made: That letters should be sent out by all credit bureaus to all those eligible for the list in arrears; that indebtedness owing at the time of the establishment of the list in arrears be converted into notes and if a note is not paid, the account placed on the arrears sheet; that if notes are at any time taken for accounts on the list in arrears, notation should be made thereon that it is not in payment of the account, but only an evidence of the indebtedness; that cash discount after the expiration of the discount period should not be allowed under any circumstances; that it is advisable that all bureaus use a uniform experience key; that wholesalers located outside, but doing business in territories now covered by credit bureaus, should get in touch with secretaries and respect the plan of operation therein; that complete interchange of credit information between credit bureaus should at all times be had, particularly on those leaving with accounts unpaid to local jobbers; that the direct inquiry system is fast becoming a menace and a nuisance to the wholesalers and opens up their ledgers to others; that local credit bureaus represent efficient, central clearing houses and amply sufficient, and that direct inquiries should rarely be used and seldom answered."

He may need it only *once*...

To the most cautious pilots, to the most careful engineers and janitors, *accidents can happen.* Perhaps only once in a lifetime. But that possibility is enough to warrant using the most dependable safety devices for planes and boilers alike.

Every low pressure heating boiler—regardless of the make or system—is subject to the danger of *accidental low water.* Carelessness, priming due to improper piping or dirt, or the failure of complex automatic devices are the causes . . . A cracked boiler is the result. The new Webster Boiler Protector is the preventative.

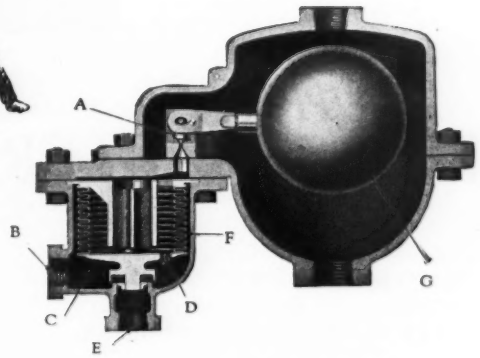
Positive Protection Against Low Water

For five full years this device has been in process of development, tested and retested under actual service conditions. The winter of 1929-30 saw nearly 100 installations subjected to every kind of use and abuse. Not until they came up to Webster standards in every detail of performance for an entire heating season were they offered to the trade as a Webster product.

For Every Type of Low Pressure System

The market for Webster Boiler Protectors is at every contractor's door. They can be sold in new as well as existing installations; in Webster Vacuum and Type "R" Systems; and in the other vacuum, vapor and one-pipe installations. Every cracked or burned out boiler you repair means an easy and profitable sale of the Boiler Protector. Be the first in your locality to recommend, install and profit from this Webster Product.

The nearest Webster Branch Office is ready to give you detailed information and to supply your requirements immediately. Write or phone today.



Study this Construction

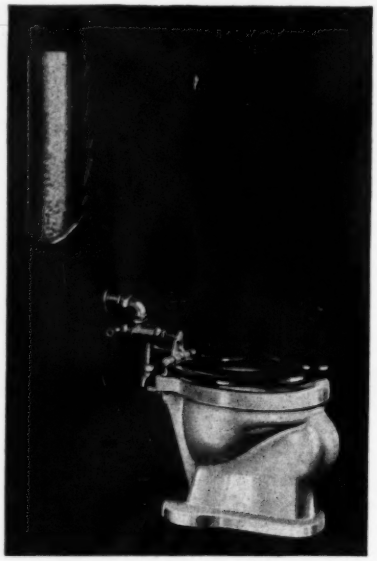
Here is how it works: City water pressure is maintained in the smaller chamber both inside and outside the Sylphon Bellows. When the *need for protection* arises it is indicated by a falling water line and the consequent falling of the float in the large chamber. When the ball float drops down it opens valve (A) in the smaller chamber causing a lower pressure in this chamber than within the Sylphon Bellows. This pressure difference serves to compress the Bellows, raising the outlet valve from its seat and permitting water to flow through the pipe connection into the boiler. When proper water level is reached the float has risen sufficiently to shut off the connecting pressure valve and the Bellows extends again to seat the water outlet valve. Repeated severe tests show that this valve *simply cannot be stuck open or closed* because of the enormous power inherent in the design.

Warren Webster & Company, Camden, N. J.
Pioneers of the Vacuum System of Steam Heating
Branches in 60 principal U. S. Cities—Darling Bros., Ltd., Montreal, Canada
P-3

The New Webster Boiler Protector

Haas Automatic Pressure Tank Closets

Many schools, factories, institutions, public buildings, comfort stations and garages—in many sections of the country—are equipped with Haas Automatic Pressure Tank Closets. So many of them are in use and are serving so well, that we rest the test of just what they will do entirely on what they have done.



Available in an unusually wide range of types and styles, Haas Automatic Pressure Tank Closets are adaptable to any public or semi-public installation. One of these types is bound to fit the need exactly. And you can supply it at a worthwhile profit. Keep our catalog handy—it pays dividends and brings new customers!

New Catalog Now Ready

The Haas Sectional Catalog "C" —of all Haas products—is now ready for you. If you do not have a copy, write us or your jobber today. It will be sent no charge, and without obligation to you. This combination of six separate catalogs bound into one complete volume should be in your files.

Equipped with
HAAS MASTER VALVE

Here's just the information you want about the Haas Master Valve: It is a simple and practical device having a brace arm to relieve the closet spud of practically all strain when valve is operated. It works easily and surely, delivering maximum service at minimum cost of upkeep.

The construction of the valve is extremely simple, having only two washers in the entire assembly. These washers are treated and incased, which insures long life.

The valve bodies are made of highest grade bronze, with all interior working parts of brass, and a phosphor bronze spring.

This valve can be installed over staple earthenware, either washdown or siphon jet pattern. The advantages of this standardization enable plumbers and jobbers to furnish bowls from their own stock, or to secure them from nearest source of supply and thereby reduce freight costs on shipments. It also permits replacement of old equipment with up-to-the-minute valves without sacrificing the bowls.

Ask your jobber to handle these Haas items.

THE PHILIP HAAS CO., Dayton, Ohio

Haas

Connecting Water Closets at Three Different Levels

(Continued from Page 68)

nections that can be used and still make the work entirely safe.

A similar case of needlessly venting the water closet on the top floor is seen in Fig. 6. This elevation is taken from the pilot drawing covering the practice in nine towns in one of the counties of the state of New Jersey. Such a requirement results from the demand that any water closet over 45 in. from its stack, must be vented. If this top floor fixture had been within 45 in. of the stack, no vent would have been required. Does anyone believe that this water closet would have been in danger of siphonage if located at a very much greater distance from its stack than 45 inches?

Requirements for Closets Away from Stack

Also taken from a pilot drawing of one of the leading cities of New Jersey is the work shown in Fig. 7, which covers in an intelligent manner the handling of a water closet located at a distance from its stack. In this city the requirement is that every branch soil or waste pipe 10 ft. or longer, to which a water closet or other fixture connects, shall be vented by a stack undiminished in size. This means that the water closet at the right on the second floor, would have to be served by a branch continued full size through the roof, 3-in. or 4-in. as the case might be. It will be observed that this line also serves as a circuit vent for the other water closet.

One of the Virginia cities does not require any water closet to be vented which is within 6 ft. of its stack. The venting of the lowest closet in Fig. 8, however, is covered by the following regulation:

"Every branch or horizontal line of soil pipe 6 ft. or more in length, to which a water closet is to be connected, shall be ventilated by a return vent pipe connection of not less than 2 in. in size, taken from the end of the same and extended through the roof, or connected to the main soil pipe above the highest fixture."

Quite a number of cities in different parts of the country show in their plumbing codes or on their pilot drawings or in both, the requirement illustrated in Fig. 9. This is generally worded about as follows:

"Any vertical branch rising 10 ft. or more, or any lateral branch running 25 ft. or more from the main soil line, shall continue full size through the roof, or return full size to the main stack above the highest fixture."

The Ohio state plumbing code contains this same requirement, and Fig. 10, which illustrates it, is taken from the Ohio state pilot drawing.

One of the large cities of Pennsylvania requires the venting of those water closets which are 8 ft. or more from the stack which serves them, but water closets which are within that distance require no vent. Fig. 11 gives an elevation taken from the pilot drawing of this city. In our opinion the lower water closet needs to be vented as much as fixture on floor above.

SPECIALISTS

. . . . 52 YEARS

THERE are some disadvantages in being a "specialist." And as "Pipe Cutter Specialists" we appreciate our disadvantage in not being able to offer the Trade a full line of tools for plumbers and gas fitters. However, it has been our policy to concentrate on this one endeavor to produce consistently year in and year out a complete line of Genuine Barnes Three Wheel Pipe Cutters, that will give the Trade *the best we have*—eminently satisfactory pipe cutters.

This policy has not been disappointing.

The fact that "Specialists" in any vocation are recognized as most dependable, no doubt has contributed to the continued demand for Genuine Barnes.

The Genuine Barnes comes in eight sizes to cut any pipe up to twelve inches. Carried by leading supply dealers everywhere.

The Barnes Tool Company, Inc.

Creators of the Genuine Three-Wheel Barnes

New Haven Conn.

F. W. Swanson

Why Trade Practice Rules Have Not Been Aggressively Enforced

By F. W. SWANSON*

TWO years ago this week on this same platform your speaker as the incoming president of the Central Supply Association, pledged himself to twelve months of conscientious effort in your behalf.

One year ago this week the happy, spontaneous, generous attitude of this group toward your retiring president, surely must have meant practically a unanimous approval of what in co-operation with others we had attempted to accomplish during our tenure of office.

December last a few of you were responsible for drafting me into a second year of association effort, this time as a paid servant of the entire industry to gain for the entire industry whatever value there could be gained through the observance of our fair trade practice rules.

From me, as the president and commissioner for the year 1930 of the National Plumbing & Heating Institute, Inc., a corporation entrusted with the task of securing adherence to the trade practice rules of our industry, you are entitled to an accounting.

I accept my responsibility for an accounting and offer no apology for the results.

I think results have been good, in fact, when one considers that the trade practice movement has cost the plumbing and heating wholesalers of the United States less than $90.00 average per independent unit, in nearly two years of agitation, and operation it must be said that more tangible results have accrued to our industry as a result of the trade practice movement than ever before accrued within such a short space of time from any other activity of our industry whatsoever.

However, my purpose this morning is not to prove such a statement or to remind you that in the year 1927 with no such serious depression generally as we have today, 42 per cent of all industries in the United States showed a loss on their year's operations and that in our own Central Supply Association territory for the year 1927 only 41 per cent of the wholesalers were able to report net profits.

Neither is it my purpose to remind you that in the year 1929, helped in part by the co-operative spirit engendered by the trade practice movement, 64.8 per cent of our wholesalers in the same territory, with less volume, showed a net profit.

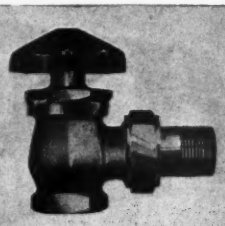
Neither is it my purpose this morning to further remind you that in the year 1927 such important commodities to the wholesalers market as boilers and radiation were sold in three-quarters of the United States at less than the wholesaler's cost of distribution, but that in the last months of 1929 and the early months of 1930, in practically all of the United States, thanks to the spirit of fair trade practices that for ten months had gripped the industry, boilers and radiation were sold at almost the wholesaler's cost of distribution—an average distribution or operating expense before interest of 17.65 per cent in 1928, 17.96 per cent in 1929; Third Annual Survey, Central Supply Association, authority. One wholesaler in the East recording a typical example of this situation when he published figures showing that with a drop in volume under last year of 9 per cent his average gross margin on boilers and radiation this year up to June 1st was 16.6 per cent, his gross margin in August 16 per cent, his gross margin in September 15 per cent, recording the further interesting comparison that in 1928 his gross margin on his sales of boilers and radiation averaged him 9.56 per cent—on a volume of $100,000, a difference of over $7,000 net.

Neither is it my purpose this hour to remind you wholesalers, that thanks to the better spirit of common sense and confidence existing among groups today, as a result of the trade practice movement with its by-product—the elimination of what in the past had been called fear in declining markets of what competitors would do, especially years of depression such as 1930 with volume off thirty to fifty per cent, that the wholesaler's depreciation in his stocks on hand this year of 1930 except in one glaring instance, has been gradual and orderly, saving him, if he would but stop to think, thousands of dollars upon inventory values, as well as upon merchandise sales made while inventories were being shrunk to the smallest possible figures.

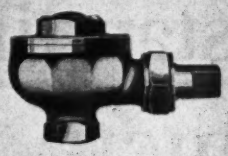
No Attempt at Aggressive Enforcement

No, my purpose this hour is not to remind both wholesalers and manufacturers of what has been accomplished through the lawful means provided for closer co-operation, one manufacturer with another manufacturer, one wholesaler with another wholesaler, one group with an-

* An address by Fred W. Swanson, president and commissioner, National Plumbing and Heating Institute, Inc., before the 36th annual meeting of the Central Supply Association.



Marsh System Unit Radiator Valve



Marsh System Unit Radiator Trap

Marsh Air and Vacuum Valve

Marsh System Unit No. 9
Heavy Duty Trap

MARSH

presents truly modern heating at the POWER SHOW

Booths No. 258-259 Dec. 1st to 6th

The products shown on this page illustrate a small part of the complete Marsh Line ... but they cannot illustrate the enduring quality, the painstaking workmanship and the progressive engineering that are so vital a part of every Marsh System Unit and Marsh Heating System.

Come to Booths 258-259 at the Power Show and learn more about these products that are revolutionizing modern heating practice. Let our representative demonstrate the operating model of a Marsh Weather Compensating System of heating. He can give you conclusive evidence of the marked increase in economy and efficiency that results from the application of Marsh System Units.

JAS. P. MARSH & CO.

(Division of Commercial Instrument Corporation)

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2079 Southport Ave., CHICAGO, ILL.

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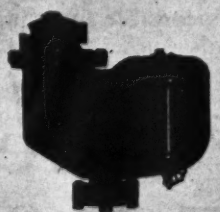
Marsh Type W Control Panel



Marsh System Unit
Equalizer and Return Trap

Marsh System Unit No. 8
Drip Trap

Marsh System Unit No. 12
Drip Trap

Marsh System Units T.M. REG.

Marsh Heating Systems T.M. REG.

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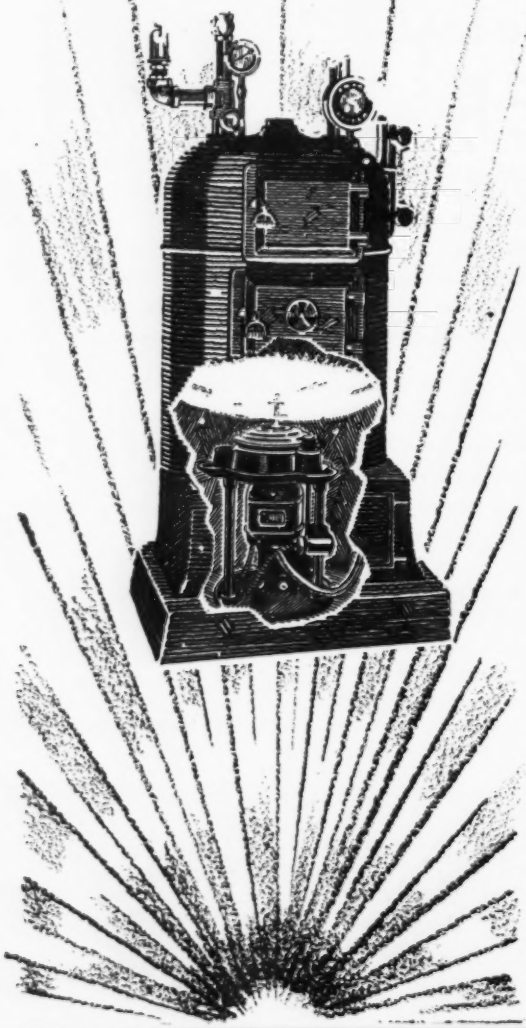
THE SILENT GLOW SUNFLOWER HEATER

—an Outstanding Product



The Silent Glow Sunflower Heater is the outstanding rotary burner.

It's the product of seven years' successful experience.

It has the simplest oil feed made. It draws oil directly from the outside tanks without any transfer pump.

It is made by the Silent Glow Oil Burner Corporation, the largest maker of range burners in the country—a strongly financed, ably officered, progressive company that in seven years has risen to leadership in its field.

Silent Glow stands back of the Sunflower and guarantees satisfaction. It stands back of its dealers and gives them full support and cooperation. That is why Silent Glow's dealer turnover is less than one per cent per year.

Sales this year far exceed those a year ago. This is the time to find out what Silent Glow offers you—in generous profits and the satisfaction of selling dependable merchandise. Use the coupon for details—now.

The **Silent Glow**
Oil Burner
Corporation

Hartford :: Conn.

The Silent Glow Oil Burner Corp.
Hartford, Conn.

Please tell me all about the Silent Glow Sunflower Heater—and your dealer policy.

Name.....

Address.....

City.....State.....

DE-11-15-30

other group, or to claim as one could claim justly that the trade practice conference procedure of this industry and the prospect of assurance it held out contributed offensively in no small degree to whatever satisfactory results in stability have been achieved the past trying year and likewise prevented defensively a possible utter chaos and demoralization within the industry, but rather my purpose this morning is to frankly disclose the reasons for the failure (if one could call it that) of the institute contrary to expectations to attempt aggressive enforcement of the trade practice rules of the industry as and when violated, through the anticipated power of enforcement of the Federal Trade Commission arm of the government.

No sooner had we assumed the office of active commissioner than rumors began to emanate from Washington indicating that selfish and sinister interests through their activity were inserting within the commission such an uncertainty of action as to throw into what seemed almost hopeless confusion any effective policy to carry out the Federal Trade Commission Act, particularly, insofar as 110 industries having held trade practice conferences were concerned, that most important section of the act—Section five—expressly declaring that all unfair methods of competition in commerce were unlawful.

Fair Profit Is Object of Associations

If we admit frankly the real purpose of all association work and we have now some two thousand associations in number in the United States, we must admit that the primary objective is to secure for the individual within the industry, a just, fair profit through the securing of a just, fair selling price above cost for the service both the individual and the industry render the public.

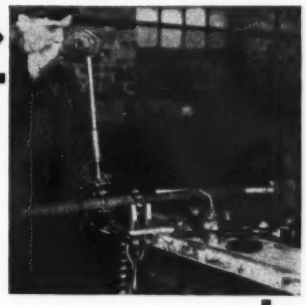
To protect the individual in his opportunity to secure for himself through free and open competition a just, fair selling price for the service he renders, the government of the United States some thirty years ago passed the Sherman Anti-Trust Law, a law prohibiting the monopolization of a field by large industrial units and the retarding of individual competition by any combination or conspiracy in restraint of trade.

Later, to outlaw the unjust price discriminations practiced by many great corporations to the ruin of their smaller rivals, the Congress of the United States in 1914 passed the Clayton Act, an Act containing a sweeping declaration against price discriminations under certain conditions, the conditions to apply only where the effect of such discriminations would be to substantially lessen competition or tend to create a monopoly.

In September of that same year, Congress passed the Federal Trade Commission Act denouncing unfair methods of competition, a term used to fairly embrace every unjust, dishonest and inequitable practice by which one seeks to unfairly destroy or injure the business of a competitor. In this legislation, Congress had in mind the prevention of acts of anticipation which would amount to unfair methods of competition whatever their inception and whatever their effect, whether great or small.

Men frequently say that they do not want to see the government in business.

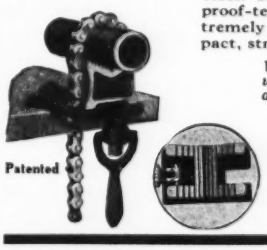
Sufficient improvement to justify a patent



To the casual observer the ARMSTRONG BROS. Chain Vise is just another vise, but embodied in its design are sufficient improvements for a patent. One of its unique features is its 1-piece drop forged jaws with the solid center construction that prevents even the smallest pipe from being bent by the chain.

The improvements of this vise are not confined to design. It is made of better stuff. Bases and handles are of drop forged steel as well as the jaws; screws are alloy steel; nuts, hardened steel. Chains have proven strength, are proof-tested. You will find this an extremely convenient vise, light, compact, strong and of large capacity.

Write for Catalog P-10 which shows and describes a full line of improved tools.



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The GLOBE Sizzler

THE NO-POCKET, ONE-PIECE FURNACE COIL

Easy to Install — Brings Real Money

THE Globe Sizzler is easy to install because it is adjustable to variable water-pipe openings. It actually costs but little more than making up ordinary furnace coils. Customers recognize its superiority, so it brings you real money.

It can't clog or lime up because it contains no pockets. Water always flows noiselessly and freely through the Globe Sizzler, in a horizontal and upward direction. *Write us today for full information.*

GLOBE MACHINERY & SUPPLY COMPANY
227 W. Court Ave. Des Moines, Iowa

The Globe Sizzler is made in different lengths to fit all makes of furnaces. It comes to you ready for installation, each coil packed in an individual carton.

The Sherman and the Clayton Acts have already placed the Government of the United States in the position of regulating business. Unfortunately, as it has later developed, both of these acts as construed heretofore have been effective only after the irreparable damage done had grown to such proportions that a monopoly was created, that trade was unreasonably restrained, or that competition was substantially lessened.

Through the Federal Trade Commission Act alone will the average American business man and the American public in every day average competition find security against deception, oppression, fraud, or against inequitable or unfair competition.

Our industry is no different from other industries.

Our problems are the problems of other industries, all of these problems resulting from the extraordinary development of industrialism, as we know it today.

Experience proves that only as our growing industrialism can be confined within the limits of fair methods of competition will the average man within industry be able to compete and continue to serve the public interest.

We can think of no other solution to secure stability and prosperity in industry but the solution which must come through the voluntary or involuntary elimination by all within industry of those practices and methods that are unfair.

We are not alone in these views. The president of a large national manufacturing company, after reviewing conditions within his own industry, recently made this public statement:

> "that if an industry fails to initiate a movement to properly adjust its trade practices as its trade association's primary activity it will face a difficult and painful situation; that a properly organized and adequately financed trade association can cover the entire field of group activity but the cornerstone should always be a proper adjustment of trade practices."

The Federal Trade Commission charged by Congress to carry out the provisions of the act creating it, for ten years adhered to a broad policy of helpfulness to American industry. Through its approval of trade practice rules previously adopted by industries based on the broad provision of Section Five of the Federal Trade Commission Act, which gradually by the wholesale stipulation of whole industries was driving unfair methods of competition out of commerce, they were carrying out the original purpose of congress in passing the act, a purpose well expressed by Senator Cummins when he said:

> "that Section Five was intended to seize the offender before his ravages had gone to the length necessary to bring him within the law we already had."

Fails to Explain Change in Policy

The commission, after ten years of adherence to a policy of building their trade practice procedure upon the broad all inclusive and unlimited grant of the mandatory power of Section Five of the Federal Trade Commission Act, suddenly reversed their policy and early

The
CHESTER
Vitreous China Lavatory
Newest in Design—Beauty—Convenience

The Chester offers to your customers the opportunity of having an extra washroom without sacrificing a great deal of space.

Due to the front overflow feature, it extends only 15½ inches from the wall, yet the basin is full size.

Being of vitreous china, it will not stain from medicines or fruit acids. Furnished with or without tooth brush holders.

Keystone Pottery Products
KEYSTONE POTTERY CO., Trenton, New Jersey

this year for a reason never publicly explained began to revise rules previously adopted, limiting the price discrimination and allied rules as tentatively revised to the limitations of Section Two of the Clayton Act on price discrimination.

Men, we must either believe what true facts prove, or we must refuse to find the facts.

In our thinking of what must be true if the industry as a whole is to compete fairly and sell its goods on the excellence of its product, rather than on the advantage of price concessions, we either must believe that in this age of new industrialism, wholesalers or dealers performing the function of a wholesaler or of a dealer, are entitled within those same functions to an equal price with their competitors or we must believe that it is then legitimate, equitable and lawful to commit acts of discrimination, depredation and deception, just so long as those acts of discrimination, depredation and deception do not amount to a complete restraint or a complete annihilation of competition as a whole.

Congress in enacting Section Five of the Federal Trade Commission Act did not intend that the commission be confined to the limitations of the Clayton Act. But even if it were so limited, anything approaching a liberal interpretation of the words used in Section Two of the Clayton Act, to-wit: "effect may be" and "or tend to" would stop most price discrimination as practiced in the industries today. "Great Oaks from Little Acorns Grow." Any seed of price discrimination planted anywhere has within its shell the possibility that the effect may be to lessen competition or tend to create a monopoly.

Since the government in all its activities in freight, express, postal rates, etc., countenances no discrimination, in private business, and there can be no private business today that is not the concern or the interest of the public, are we to understand the government then to say:

> "Cripple unfairly and if you do not destroy it is not unlawful."

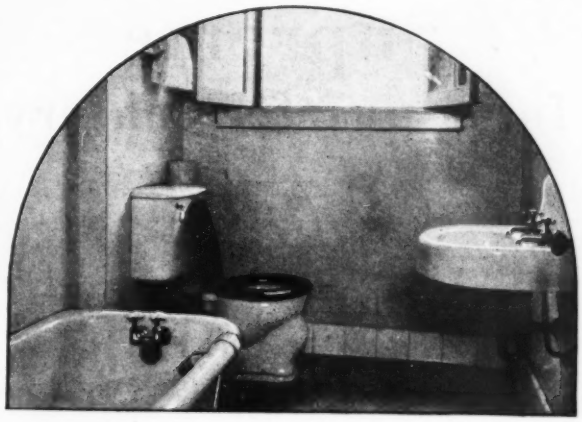
On the same theory is it not reasonable to conclude that there should be no crime committed if in an attempt to commit murder the victim was only slightly maimed.

When early this year the Federal Trade Commission listened to the counsel of men unfriendly to the trade practice movement and accepted the doctrine that price discriminations in any form, or secret rebates, or selling below cost, were not unfair methods of competition if they did not substantially lessen competition or tend to create a monopoly, industry claims they subordinated the organic Trade Commission Act to the Sherman and Clayton Acts.

The opponents of the trade practice movement first charged that it was illegal but were silenced when the assistant to the attorney general of the United States publicly declared the trade practice movement had become recognized as a valuable institution and that the department of justice had no hostility toward it.

The opponents of the trade practice movement then continued their charge that the price discrimination rules of the commission were illegal if not based upon the limitations of Section Two of the Clayton Act.

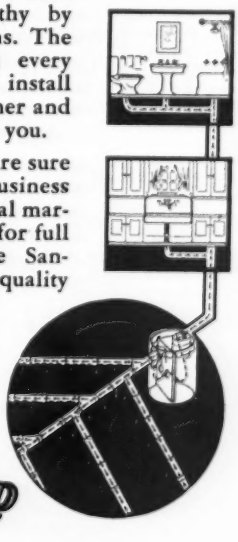
(To be Continued)



Your Suburban Customers Want Modern Plumbing

AND they will be definitely interested in buying plumbing fixtures when you tell them about SAN-EQUIP "Certified" —the dependable sewage disposal system.

The San-Equip system is as trouble-free as science can make it. It consists of the patented, two chamber San-Equip Septic plus a drainage field of San-Equip Filter pipe or a San-Equip Drain Pool. The exclusive features of this complete system have been proved trustworthy by thousands of installations. The certificate issued with every San-Equip System you install means a satisfied customer and increased good will for you.



With San-Equip, you are sure to realize a profitable business in the suburban and rural market. Send the coupon for full details concerning the San-Equip plan for selling quality sewage disposal systems at a profit.

SAN-EQUIP INC.
(Formerly Chemical Toilet Corp.)
9211 E. Brighton Ave.
Syracuse, N. Y.

San-Equip

SEWAGE DISPOSAL SYSTEMS

San-Equip Inc.
9211 E. Brighton Ave.
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Please send me complete information concerning the San-Equip Sales Plan.

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Address .....

City ..... State .....

Supreme
for a quarter century

Sylphon

DAMPER REGULATORS

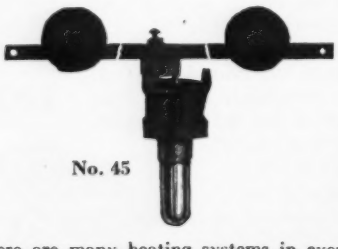
for steam, hot water or vapor heating systems

No. 23

The Fulton Sylphon Company produced the first practical and dependable damper regulators nearly a quarter of a century ago.

They have never been equalled in smooth and positive action. Employing the famous Sylphon Bellows as their expansion member, they are everlastingly efficient.

Automatically checking or increasing drafts with the slightest change in steam pressure or water temperature they save labor, prevent fuel waste, and prolong the life of a boiler. Over a million are guarding fires today and they are standard factory equipment on the nation's leading makes of boilers.



No. 45

There are many heating systems in every locality which need Sylphon Damper regulation to make them perform satisfactorily. Now is the time to check up on these possibilities of sale and installation.

It means more business, more profit, and more customer friendship. It will pay you to write today for illustrated descriptive bulletin VD-250.

FULTON SYLPHON CO.
KNOXVILLE, TENN., U.S.A.

Representatives in all Principal Cities in U. S. A.—European Representatives, Crosby Valve and Eng. Co., Ltd., 41-2 Foley St., London, W. 1., Eng., Canadian Representatives, Darling Bros., Ltd., 140 Prince St., Montreal, Que., Canada.

Business Personals

B. E. BENSINGER, president of the Brunswick-Balke-Collender Co., has just returned to Chicago after a 25,000-mile business trip to Europe and to South America. He expressed his confidence in the future of American business.

W. W. HOLLOWAY has been elected president of the Wheeling Steel Corp., Wheeling, W. Va., upon the resignation of ISAAC M. SCOTT. Mr. Holloway, who has been director of the Wheeling Steel Corp. and president of the Wheeling Corrugating Co., has had an experience of twenty-five years in the industry. He started in the steel business with the old Wheeling Steel & Iron Co., one of the units which went to make up the present Wheeling Steel Corp., and succeeded his father on the board of the latter concern several years ago. Mr. Scott, who retires as president of the Wheeling corporation, plans to travel and rest. He became president of the corporation upon its formation in 1920 through the merger of the Wheeling Steel & Iron Co. (of which he was president), Whittaker-Glessner Co. and LaBelle Iron Works.

Elmer F. Howell

ELMER F. HOWELL has been appointed general sales manager of the J. L. Mott Co., of Trenton, N. J. Mr. Howell has been connected with the wholesale and manufacturing branches of the industry for the past twenty-three years, and has been owner of the Howell Co. of Hackensack, director and officer in several banks, mayor of North Hackensack and River Edge, N. J., and executive vice president of the Laib Co., Louisville, Ky. Mr. Howell has just concluded an extensive trip, visiting the company's warehouses and distributors.

JONAS L. OBERDORFER, president of the M. L. Oberdorfer Brass Co., and connected with that company for the past twenty-five years, has resigned and will devote his time to other business interests.

A. H. SHAFER has recently been appointed manager of the Pittsburgh office of The Foxboro Co., of Foxboro, Mass. He will replace H. S. GRAY, who is now in charge of office routine at the home plant.

B. D. SPOFFORD, formerly advertising manager of The Waco Aircraft Company, has joined The Duriron Company, Inc., Dayton, Ohio, as advertising and publicity manager, as of November 1.

S. H. TWIST has been appointed sales manager for The Metal Specialties Mfg. Co., Chicago. Mr. Twist was at one time director of sales and advertising for the Selig Polyscope Co., later he put into effect a selling plan for the Smith Form-a-Truck Co., and during the war, served as captain in the A. P. L. Division of the Department of Justice. Upon the conclusion of the war, he became advertising man-

ager and assistant general sales manager of Ditto, Inc. He established the Office Equipment Catalog, and later was engaged in organization and sales promotional work.

JOHN F. ROWE has accepted the position of manager of the plumbing goods division of the Bridgeport Brass Co., Bridgeport, Conn., the concern with which he was connected from 1902 to 1922. In this position, Mr. Rowe reassumes charge of the department of the company which he directed from 1917 until he resigned to go with J. B. Wise, Inc., Watertown, N. Y., in 1922. Shortly after his affiliation with the latter concern, Mr. Rowe was made eastern sales manager with offices in New York City, from which position he resigned, effective November 1.

JOHN A. HURLEY, who for the past seven years has been general credit manager for Pierce, Butler & Pierce Mfg. Corp., New York City, has resigned. Mr. Hurley has as yet made no announcement of a new connection but expects to remain in the plumbing and heating industry. He is president of the Jobbers' Credit Association, New York City, an organization with a membership of nearly one hundred firms in New York City, Long Island, Westchester County, N. Y., and Northern New Jersey. Prior to his connection with Pierce, Butler & Pierce Mfg. Corp., Mr. Hurley for a number of years was general credit manager and assistant sales manager for The Graton & Knight Mfg. Co., Boston, Mass., makers of mill supplies and leather.

R. P. KENNEY has just been appointed sales manager in the Pittsburgh district for Jas. P. Marsh & Co. of Chicago. Mr. Kenney's headquarters will be at 1120 Empire building, Pittsburgh, Pa.

R. E. HOLCOMBE, manufacturers' agent of Atlanta, Ga., has moved his offices from 6 Helena avenue to 1265 Lucile avenue, S. W., in that city.

◆

Celebrates Twenty-Fifth Anniversary

The American Cast Iron Pipe Company, of Birmingham, Ala., recently celebrated its twenty-fifth anniversary. At a banquet held on this occasion there were present several employes who had been with the company for 20 years or more. The two oldest employes, C. H. Hilton and John Rich, were placed on the company honor roll and awarded checks for $100 each.

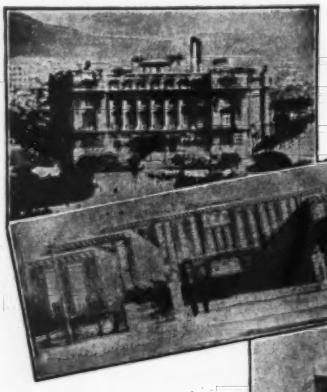
◆

Bureau of Standards Proposes Revision of Standards of Wrought Iron Pipe Nipples

The Department of Commerce, Bureau of Standards, Washington, D. C., on October 27 addressed a proposed revision of commercial standards of wrought iron pipe nipples to manufacturers, distributors and users. The proposed changes which were recommended by the standing committee are intended to bring the commercial standards into harmony with the recent revisions effected by the American Society for Testing Materials, and include the definition for wrought iron and the specification for wrought iron pipe of that group, changes in actual thickness and inside diameters of the pipe to suit actual weights specified, and a few minor changes in wording and arrangement.

Increase Your
PROFITS
What Does An Extra Profit Mean To You?
THE wide-awake plumbing contractor has found a good profit in toilet partition business. He includes the partitions on the job with his plumbing estimate. This extra profit is easiest to get when Sanymetal Unit Panel Partitions are installed, because they are accurately designed, simple in construction, and consequently more quickly installed. Sanymetal Steel Toilet and Shower Partitions are rigid, sanitary, durable, and good-looking.
Business is only as good as you make it—and one way to make it better is through a tie-up with Sanymetal.
The Sanymetal Products Company will cooperate with any reliable plumbing concern. Write for details.
The Sanymetal Products Co.
1707 Urbana Rd. Cleveland, O.
Sanymetal
STEEL OFFICE & TOILET PARTITIONS

How Western Skill Helps Eastern Progress in MANCHURIA



Dairen Yamato Hotel furnished with Sarco Type H Radiator Traps by Nishikawa & Co., Dairen, in 1928.

Mukden Yamato Hotel furnished with Sarco Type H Radiator Traps, Boilers and Radiators, by Nishikawa & Co., Dairen, in 1928.

The South Manchuria Medical College Hospital at Mukden, furnished with Sarco Type H Radiator Traps and Classic Radiators, by Nishikawa & Co. Dairen, in 1928.

BORE down far enough at Reno, Nevada, and you will come out the other side of the globe at Dairen, Manchuria, about 30 miles northeast of Port Arthur, head of the South Manchuria Railroad, and virtually the property of the railway company. Here the system has built a magnificent modern city, erecting hotels, which for the Orient, are sumptuous.

At Mukden, capital of Manchuria, about 225 miles northeast of Dairen, and the other terminus of this branch, the railroad has put up a hotel probably not excelled in furnishing and equipment anywhere in the Far East.

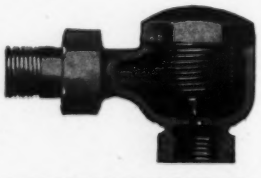
That Sarco Traps were selected by the Japanese Engineers for the three important installations pictured above is notable. One does not transport equipment half way 'round the world unless one is SURE IT IS RIGHT.

Write for catalog M-80 giving complete information.

SARCO RADIATOR TRAPS BUILT TO A QUALITY STANDARD

SARCO CO., Inc.
183 Madison Avenue
NEW YORK, N. Y.
Branches in Principal Cities

SARCO
RADIATOR TRAPS



Deflection of Pipe Filled With Water

(Continued from Page 49)

uncommon to find pipe lines installed in such a manner that only every third or fourth hanger is doing any work.

If this adjustability feature is thus adequately provided for to take care of proper installation conditions, it will automatically provide for readjustment to compensate for sagging or irregular settling of the structure to which it is attached.

The third basic factor involved in this hanger problem is cost. Obviously, cost in this connection must take into account chiefly the labor cost of installation. Therefore, every dollar spent in good design is amply repaid severalfold in the total cost of the installation.

Proper piping engineering, therefore, must include a consideration of this part of the total problem. It is next in importance only to the other two basic factors which are common to every big piping installation.

Convention Dates

January 13 to 15, 1931.—WISCONSIN—The annual convention of the Wisconsin Master Plumbers' Association, to be held at Milwaukee.

January 20, 21, and 22, 1931—ILLINOIS—The annual convention of the Illinois Master Plumbers' Association, to be held at Danville, with headquarters at the Wolford hotel.

January 27, 28 and 29, 1931—A. S. H. V. E.—The annual meeting of the American Society of Heating and Ventilating Engineers, to be held at the William Penn Hotel, Pittsburgh.

February 3, 4 and 5, 1931—OHIO—Thirty-ninth annual convention of the Ohio State Association of Master Plumbers, to be held at Canton, Ohio.

March 16 and 17, 1931—KANSAS—The annual convention of the Kansas Master Plumbers' Association, to be held in Iola, with headquarters at the Kelly hotel.

April 13 to 18, 1931.—A. O. B.—The eighth annual convention and oil burner show of The American Oil Burner Association, to be held in Philadelphia, Pa., with convention headquarters at the Benjamin Franklin Hotel. The oil burner show will be held on the exhibit floor of the Gimbel Building.

April 21, 22 and 23, 1931—TEXAS—The annual convention of The Associated Master Plumbers of Texas, to be held at Houston at the Rice Hotel.

May 11, 12 and 13, 1931—N. P. S. A.—The convention of the National Pipe & Supplies Association to be held at Cleveland, Ohio, with headquarters at the Hotel Hollenden.

June 23, 24 and 25, 1931.—N. A. M. P.—The forty-ninth annual convention of the National Association of Master Plumbers, to be held at the Auditorium, Milwaukee, Wis., with headquarters at the Hotel Schroeder.

June 23 and 25, 1931.—N. A. M. P. AUXILIARY—The annual convention of the Women's Auxiliary to the National Association of Master Plumbers, to be held in the Hotel Schroeder.

COMING TRADE EVENTS

November 18, 1930—New England Heating Trades Golf Association. Regular tournament at Unicorn Country Club, Stoneham, Mass.

January 5, 6 and 7, 1931.—The ninth annual conference of presidents and secretaries of state and local master plumbers' associations, and of state and local heating and piping contractors' associations, to be held at the Congress Hotel, Chicago.

February 10 to 14, 1931—The fifth Midwestern Engineering and Power Exposition, to be held at the Coliseum, Chicago.

June 22, 23, 24 and 25, 1931.—Exposition of plumbing, heating and allied products, in connection with the forty-ninth annual convention of the National Association of Master Plumbers, in the arena of the Auditorium, Milwaukee, Wis.

Western Supply Association

Holds Successful Fall Meeting at Del Monte, Calif.

Jesse C. Bowles, The Bowles Co., Seattle, president of the Western Supply Association

Hear Talks on Partial Payment Plans and Fair Trade Practices

"NO manufacturer or jobber of plumbing and heating equipment," said Ross M. Clark, manager of the San Francisco, Calif., branch of the American Radiator Co., before the recent meeting of the Western Supply Association, "is doing justice to the problem confronting us unless a large portion of his sales activity is devoted to the development and selling of modernization jobs. If this effort were put forth by the manufacturer and the jobber it would undoubtedly result in a far more satisfactory condition, and our salesmen would be more welcome in the offices of the trade than is the case when a large portion of their time is spent in quibbling over prices that may or may not have been quoted by their competitors."

Gathering at Del Monte, Calif., for their autumn meeting, October 23 and 24, the members of the Western Supply Association were treated to a program which indicated real progress in the organized affairs of the industry. A number of worth while talks were heard, some being informative in nature, while others dealt with the more concrete aspects of today's industrial needs. The first day of the gathering was given over to a meeting of the executive committee, and the second day was taken up by open meetings consisting of two sessions.

Left to right: B. F. Blair, Standard Sanitary Mfg. Co.; Don L. O'Hair, P. E. O'Hair & Co.; W. Allen Taylor, Wheeling Steel Corp., Walter P. Baxter, secretary of Western Supply Association, all of San Francisco; Harry V. Shinn, California Pipe & Supply Co., Los Angeles. Photos taken at the meeting of the Western Supply Association

Jesse C. Bowles of the Bowles Co., Seattle, Wash., president of the association, read a telegram from Fred W. Swanson of Chicago, commissioner of the National Plumbing and Heating Institute, Inc., who was unable to attend the meeting. In his message Mr. Swanson prophesied a broader scope for the trade practice movement. He told of the enlarged board and of the better co-operation coming from the manufacturing groups. Mr. Swanson further stated that the institute's new program provides for a field man on the Pacific Coast at stated intervals for contact with all zone committees and also for any special work under the supervision of the Western Supply Association.

Says Association Has Stabilized Conditions

Mr. Bowles outlined the aims and accomplishments of the association, and continued: "We feel strongly that this body has exerted a compelling influence on the minds of its members toward a closer co-operation, not only in the letter but in the spirit of the rules as adopted by the industry. We feel that without the Western Supply Association we would not have had as satisfactory conditions existing as we have had throughout the period of marked reduction in volume which the entire coast has seen during the past year.

"Whether you admit it or not, the influence of a closer association with your competitor has been present at all times, and has undoubtedly proved a guiding factor in maintaining stable relations.

"Gentlemen, in your association you have a vehicle which provides for the continuance of such relations. If you do not use it, it is your own fault. This is your

association. It is yours to use. Likewise, it is the intense desire of the officers and board of directors that harmonious and profitable conditions in the industry should prevail on the Pacific Coast.

"There have been rules of conduct laid down for you and approved by you when you signed the contract with the Federal Trade Commission. If you will observe these rules as closely as you follow the rules when playing a game of golf, we will have no such conditions as are observable in some localities.

"I have no doubt that had we never formed the Western Supply Association we would not have had as stable conditions under reduced volume such as has obtained during recent months.

"It is becoming apparent that our efforts in time will be entirely successful, when our activities may be turned toward more indirect benefits, such as closer co-operation with the contracting branch of the industry, the dissemination of knowledge and information among our own members, the education of ourselves and the contracting branch of the trade, activity looking toward a closer understanding between the wholesaler and the contractor, and other efforts of a similar nature. Once we have educated our own members toward the observance of the proper rules of conduct, our activities may then be turned toward those things which tend in the direction of a greater realization of profit within our industry."

Talks on Partial Payments

A feature of the closing session was an address on partial payment selling by Ross M. Clark. Referring particularly to the modernization field, Mr. Clark said: "This field offers us an almost unlimited opportunity for volume. According to the U. S. census, there are 16,000,000 homes not equipped with radiator heating, and 11,000,000 homes with no bathrooms. On the other hand, there is one automobile for every 4½ persons, but only one bathtub for every twenty."

In giving his reasons for favoring the partial payment plan, he said: "Extended terms, or installment selling, are vitally necessary when selling a modernization job. It cannot be denied that this plan has proved eminently successful in other lines of endeavor, so why should it not be developed to the same degree of success in our own industry?

"How many automobiles, radios, vacuum cleaners, and other articles of merchandise would be sold this year if purchasers were required to pay cash? You may judge for yourselves when I tell you that 85 per cent of all autos manufactured, 92 per cent of all radios and 88 per cent of all vacuum cleaners are sold on the basis of time payments.

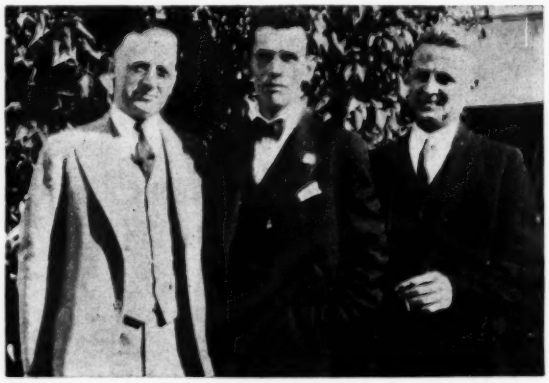
"How many people actually need and want new, modern, colorful plumbing fixtures and new heating equipment today, but defer their purchase due to a lack of cash? Why not defer the payment instead of the purchase?

"If the home-owner can buy from you on time payments, he can buy today and enjoy the use, comfort and convenience of the equipment while paying for it; meanwhile, the contractor, the jobber and the manufacturer have made a profitable sale, and have each secured their payment in full."

Outlining the thorough-going methods pursued by the finance companies before undertaking any credit risk—such methods, incidentally, working to the direct benefit of all three branches of the industry—Mr. Clark added: "Upon completion of the installation, the owner signs a completion certificate indicating that the job has been installed satisfactorily and in accordance with contract. On the basis of this certificate the contractor receives payment in full immediately from the finance company.

"Times are changing and it is vitally necessary for this industry to change and adopt more progressive sales methods and policies if we are to hold our place with other progressive industries.

"Development of the modernizing field and the proper application of the partial payment plan of selling represents the salvation of this industry. It is ours to adopt



Left to right: M. D. Horner, Oakland Plumbing Supply Co., Oakland; Ralph P. Olsen, Olsen & Heffernan, San Francisco; J. R. Winzeler, Federal Pipe & Supply Co., San Francisco. Photos taken at the meeting of the Western Supply Association

or reject, depending on whether we desire to forge ahead or stand still."

The subject of credit was taken up by George W. Kern, vice president of the Crocker First National Bank of San Francisco, who first sounded out the underlying causes for the present day world-wide business conditions. Blame for such conditions he laid at the feet of "various countries who have been discounting the future too heavily." Referring to the condition of affairs in Australia, one of the chief markets for Pacific Coast products, he said in part: "The whole history of governmental administration in the Antipodes is a beautiful picture of how a country should not be run."

A subject of vital interest to world-traders, which in the final analysis affects domestic trade to the same degree, is the British Imperial marketing movement which is now well under way. Mr. Kern stated that normally 60 per cent of Great Britain's importations originate from non-empire countries; therefore, when the new movement gains momentum it is bound to have a profound effect on American industry. The movement to buy only empire-made goods is to be made a patriotic issue—one that will be carried to every British housewife.

The well established fact that no one industry can profit at the expense of others was brought out with telling effect when the speaker pointed to the position of such commodities as wool, wheat, sugar, rubber, steel, automobiles—each, in turn, depending upon the other. When one thrives over a sustained period, indicated the

speaker, it follows that the others are likewise prosperous.

"Only those executives who mold their affairs to conform with the modern business trends can hope to survive," said Mr. Kern. "Among these trends are trade associations such as yours, those who aim toward simplification and standardization and cling to fair trade practices." Credit, he pointed out, is the life-blood of business, something that should not be curtailed but extended, where it is due. While urging in favor of a closer and more confidential relation with the retail dealer, the speaker closed by stating "but don't let him plunge!"

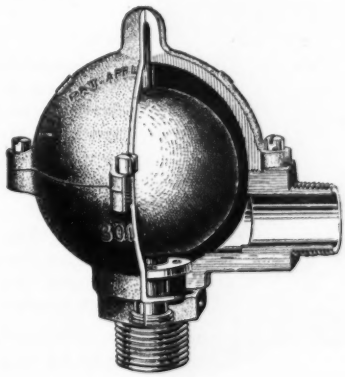
The subject of price-cutting was ably handled in a short talk by C. H. Herman of Los Angeles, who deplored the practice. "Reducing costs is a far more satisfactory method of restoring volume. Price-cutting is ruinous; the buyer spends all his time looking for the lowest price, thereby tempting him to overlook quality." . . . "Price-cutting frequently has a great deal to do with breaking the market." . . . "Many of our present difficulties might be overcome by wholeheartedly supporting the manufacturer, in which case the manufacturer would find a more selective market."

Members Present

Among those in attendance were: J. C. Bowles of Seattle (The Bowles Company); H. V. Shinn and Paul Vance of Los Angeles (California Pipe & Supply Co.); E. A. Keithley of San Francisco (Central Foundry Co.); E. C. Saul of San Francisco (Central Tube Co.); E. A. Neupert of Portland (Consolidated Supply Co.); L. B. Peeples and D. D. Updegraff of Los Angeles, J. E. McIlreevy and F. F. Elliott of San Francisco, R. M. Silknitter of Oakland, S. S. Day of Sacramento, J. T. Trenery of Spokane, C. G. Gamble of Seattle (Crane Company); J. R. Winzeler of San Francisco (Federal Pipe & Supply Co.); G. W. Manierre of Los Angeles (Fitzpatrick & Lock Co.); Wm. Fraters of Los Angeles (Fraters Valve & Fittings Co.); L. A. Cendrier of San Francisco and Charles DeGarmo of Los Angeles (Grabler Mfg. Co.); A. C. Hacker and J. R. Dickinson of Los Angeles, F. B. DeLong of Seattle and J. E. Fleming of San Francisco (Grinnell Co. of the Pacific); R. L. Leonard of Los Angeles (Harper & Reynolds); Phil. Hunt of San Francisco (Hoffman Specialty Co.); Mr. Hoodman of Los Angeles (Hoodman Plumbing Supply Co.); A. E. Lyon of Glendale

Left to right: H. K. Browning, A. M. Byers Co., San Francisco; G. S. Berry, Crane Co., Los Angeles; C. F. Cesaar, A. M. Byers Co., San Francisco. Photo taken at the meeting of the Western Supply Association

Look In Every Cellar For This Increase In Business



Red Top Relief Valve

Every building where hot water is used needs a Red Top Relief Valve to guard against destructive, death-dealing explosions which may happen without an efficient safety device of this kind. Newspapers daily list the toll of life and property damage from boiler explosions.

Look in every cellar for a Relief Valve every time you go out on a job. If there is no Relief Valve, or the one in use is inefficient, tell the owner about the property damage and personal injury which may occur unless one is installed. Point out the safety and unfailing efficiency of Red Top Relief Valves.

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Red Top installations offer you a liberal profit. Model No. 1 costs you $4.50 and an average installation charge of $15.00. Allowing for labor costs, there is usually $7.50 profit for you. Model No. 2 costs $12.00, and $25.00 to $30.00 is usually charged for installation.

This coupon will bring you complete information on this profit-making item.

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Please send me full particulars on Red Top Relief Valves and how they mean real profits for me.

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(A. E. Lyon, Inc.); P. O. Vance of San Diego (Machinery Pipe & Supply Co.); Roger Cutting of Seattle and F. A. Hammersmith of San Francisco (Northwest Lead Co.); Donald O'Hair of San Francisco (P. E. O'Hair & Co.); Ralph Olsen and Mr. Heffernan of San Francisco (Olsen & Heffernan); Earl Lyon of Santa Ana (Southern Counties Supply Co.); Robert Plant of Los Angeles (Plant Rose Co., Inc.); Charles Herman of Los Angeles (Repcal Brass Mfg. Co.); J. A. Riordan and Paul Rayburn of Los Angeles (J. A. Riordan Co.); Frank Kales of Richmond, B. F. Blair of San Francisco, R. H. Roemer of Los Angeles and H. M. Anderson of Seattle (Standard Sanitary Mfg. Co.); George Hoffman of Santa Monica (Santa Monica Plumbing Supply Co.); C. H. Stanyan of San Francisco; Myron M. McElwaine of Seattle (Seattle Plumbing Supply Co.); Elwood M. Jones of Los Angeles (Stockham Pipe & Fittings Co.); F. J. Wineman of San Francisco (M. Stulsaft Co.); Hugh Oliphant of San Francisco (Tay-Holbrook, Inc.); G. Nesheim of Los Angeles and Bruce Cruikshank of Seattle (Walworth Co.); Peter P. Schubert and Fred Chittenden of San Francisco (Walworth California Co.); Carl Christensen of Los Angeles and James Mulrein of San Francisco (Washington Iron Works); B. B. Stark of San Diego (Western Metal Supply Co.).

Left to right: James H. Mulrein, San Francisco; Carl Christensen, Washington Iron Works, Los Angeles; B. B. Stark, Western Metal Supply Co., San Diego; J. E. McIlreevy, Crane Co., San Francisco. Photos taken at the meeting of the Western Supply Association

Visitors Present

Among the visitors were: D. M. Osborne of Los Angeles (The Conover Co.); C. F. Ceasar of San Francisco (A. M. Byers Co.); Elmer Jones of San Francisco (Spang, Chalfant & Co., Inc.); J. F. Heil of San Francisco (Reading Iron Co.); J. L. Tinning of Los Angeles (Hercules Foundries, Inc.); L. H. Sacket of Los Angeles (Sacket Foundry Co.); Chas. A. McKay of Seattle (Northwest Jobbers' Association); W. F. Geddes of Los Angeles (Los Angeles Jobbers' Association); W. H. Gilbert of San Francisco (Dublin Mfg. Co.).

◆

Death of William Seth Webster

William Seth Webster, manager of the Montgomery, Ala., branch of the Standard Sanitary Manufacturing Co., died recently of a sudden illness. He had been identified with Montgomery business affairs thirty-five years. He is survived by his widow, a son and his mother. Funeral and burial was in Montgomery.

New Directors Elected by National Plumbing and Heating Institute

At the annual meeting of the National Plumbing and Heating Institute, reported in the November 1st issue of DOMESTIC ENGINEERING, twenty-four new directors were elected, twelve manufacturers and twelve wholesalers. The new directors who have already accepted their appointments are as follows:

M. W. Dennison, Braman, Dow & Co.; W. A. Brecht, Hajoca Corp.; J. C. McEwen, Davies Supply Co.; F. W. Swanson, Globe Machinery & Supply Co.; C. A. Dunlay, Dunlay-Armand Co.; L. B. Peeples, Crane Co.; H. G. Starr, Wm. H. Gallison Co.; Wm. B. Talbott, Baker Manufacturing Co.; W. H. Kiefaber, W. H. Kiefaber Co.; W. B. Bryar, Bailey-Farrell Manufacturing Co.; W. W. Bowers, Scovill Manufacturing Co.; Thos. Cruciger, Spang, Chalfant & Co.; Russell Bontecou, Grinnell Co., Inc.; Harry Speakman, Speakman Co.; Jos. A. Maynard, Boston Brass Co.; C. V. Haynes, Hoffman Specialty Co.; M. J. Beirn, American Radiator Co.; J. J. Crotty, Central Foundry Co.; H. W. Seymour, Crane Co.; Edward Keating, E. F. Keating Co.; L. U. Noland, Noland Co., Inc.

The new board of directors met immediately folfowing the adjournment of the annual meeting.

President Harry G. Starr announced the appointment of the following Executive Committee: M. W. Dennison, chairman, Braman, Dow & Co., Boston; J. J. Crotty, Central Foundry Co., New York City; L. M. O'Neil, M. O'Neil Supply Co., Brooklyn; J. C. McEwen, Davies Supply Co., Chicago; F. W. Swanson, Globe Machinery & Supply Co., Des Moines, Iowa.

◆

Adolph F. Gartz Dies

Adolph Frederick Gartz, retired official of Crane Co., Chicago, died October 29, at his home in Altadena, Calif., after a heart attack. Mr. Gartz, who was in his sixty-ninth year, was born in New York. He joined the Crane Co. at the age of twenty-six, and later became treasurer of the company. At one time he was a civil service commissioner in Chicago. He was widely known in social, political and business circles in Chicago.

When his health failed a number of years ago, he bought a home in California and had resided there almost continuously since. He is survived by his widow, Mrs. Kate Crane Gartz (a daughter of the late Richard T. Crane) who is widely known for her philanthropies. He also leaves three children, A. F. Gartz, Jr., of Chicago, vice president of Crane Co., Richard Crane Gartz and Gloria Gartz, of Altadena.

◆

Jas. P. Marsh & Co. Appoint Sales Managers

A. D. Rose, general sales manager of Jas. P. Marsh & Co.; manufacturers of industrial instruments and heating systems, Chicago, announces the appointment of the following divisional sales managers: In the Eastern district, A. S. Bain, heating division, with headquarters at Washington, D. C., and R. S.

1855 - SEVENTY-FIFTH ANNIVERSARY - 1930

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Gaisford, industrial instruments and staples sales, at New York City. In the Central district, Tom Kenney, Chicago. In the Western district, Paul W. Beggs, Chicago. National sales are under the direction of O. Wm. Hage for industrial instruments and staples and H. W. Butsch for heating systems.

◆

Mid-West Oil Burner Mfg. Co. Announces Representatives

The Mid-West Oil Burner Mfg. Co., Chicago, announces the following: W. A. Kemp, formerly connected with Hardinge Brothers, Inc., is now in charge of sales for the company. J. H. McKone, formerly with Williams Oil-O-Matic Heating Corp., in the East, is now eastern representative for the Mid-West company with offices at Terminal Commerce Building, 401 North Broad street, Philadelphia. W. V. Rea is traveling in the central states, appointing dealers for the company. O. R. Osmundson is representative in the Minneapolis district.

◆

A. O. B. A. Committee Drafts Code for Testing Oil Burners

The draft of a code for testing oil burners and steam boilers has been completed by the technical research committee of the American Oil Burner Association. The test code was developed in connection with the research work now being conducted at Sheffield Scientific School, Yale University, by Professor L. E. Seeley, and the work is being done in co-operation with the research laboratories of the American Society of Heating and Ventilating Engineers.

Members of the committee who participated in the final draft of the code are J. H. McIlvaine, McIlvaine Burner Corp., Evanston, Ill., chairman; R. W. Beckett, Silent Automatic Corp., Detroit; Homer Linn, American Radiator Co., New York City; Professor Seeley; W. C. Schoenfeldt, technologist of the American Oil Burner Association, and Harry F. Tapp, executive secretary.

◆

Central Trades Golf Association Plays South Hills Country Club

The Central Trades Golf Association held its October meeting at the South Hills Country Club on October 13. This was the final meeting for the season, and the ideal weather aided in securing a good attendance. Most of the members arrived at noon in time for luncheon, and started their eighteen holes after having been lined up by the handicapper, Dazzy Vance.

At the dinner in the evening, it was decided that the association go on record as favoring the combining of the Triangle Club (a golf association in Pittsburgh comprising representatives of mill supply houses and allied fields) with the Central Trades Golf Association. It was recommended that the officers of the two associations arrange the details of the merger.

Winners of the foursomes were: David Smythe, Art Schley, Harry Rowland, W. H. Howe, Karl Kahley, Dazzy Vance, E. H. Keenan, and Thos. Welsh. Win-

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ners of the kicker's handicap were: Ed. Berthet, W. H. Howe, E. H. Keenan, William Bryar, Karl Gauerman, Art Schley, George Hamilton and Ed. Kunde.

Scores for the day were as follows:

				Kickers	
	G.	H.	N.	H.	N.
John Carr	..	..	..	..	..
David Smythe	101	30	71	27	74
Geo. Hamilton	106	25	81	30	76
Pete O'Neill	120	35	85	50	70
K. H. Gauerman	89	20	69	20	69
E. A. Snyder	127	35	92	40	87
Karl Kahley	103	30	73	30	73
E. E. Berthet	96	..	..	25	71
W. H. Howe	103	30	73	25	78
H. R. Rowland	89	17	72	17	72
F. A. Vance	84	3	81	10	74
Edw. Kunde	106	30	76	30	76
Jas. McKissock	95	22	73	22	73
W. B. Simpson	101	21	80	20	81
J. J. Kenney	98	20	78	18	80
H. K. Downe	80	13	67	10	70
A. A. Schley	89	21	68	21	68
W. B. Bryar	106	25	81	31	75
H. J. Harte	95	15	80	23	72
Roy Brauer	100	..	..	28	72
E. H. Eggleston	93	15	78	21	72
L. P. Keenan	93	..	..	18	75
Thos. Welsh	102	..	..	28	74

◆

N. E. M. P. Golf Association Plays Manchester Country Club

William Hayes was host to about 21 members and guests of the New England Metal Products Golf Association on October 2, at the Manchester Country Club. As well as being a great host on Thursday he entertained at the country club the night before. The golf course was in good condition, the weather beautiful, so, naturally, a fine day was had by all. Ex-Mayor George E. Trudel of Manchester, a former member of the New England Metal Products Golf Association, spoke at dinner and stated how glad he was to be present.

Maurice Lynch, with a net 69, was awarded a handsome poker set as first prize, second prize was won by Robert McKeown, who received a flask for a net 71; William Hayes with a net 72 was awarded third prize. There were also six other prizes of three golf balls each awarded to those with the lowest net scores.

Following are the scores for the day:

	G.	H.	N.		G.	H.	N.
Wm. Bennett, Jr.	121	39	82	E. B. Lane	82	7	75
J. H. Carr	115	36	79	M. A. Lynch	92	23	69
M. W. Dennison	94	14	80	R. McKeown, Jr.	85	14	71
Fred Egglestone	117	27	90	W. F. Stearns	111	24	87
G. F. Elliott	103	27	76	George Stevens	112	33	79
William Hayes	84	12	72	W. H. Taylor	92	18	74

◆

Death of John R. Wilson

John R. Wilson, president of the Thomas Robertson & Company, Limited, Montreal, Que., died after a brief illness at the age of 47. He was regarded as one of the most capable executives in the wholesale plumbing and heating supply business in the Dominion. He had become associated with the company in a junior position after his graduation from college and gradually worked his way up to the top. He was appointed vice-president of the company after the death of his father, and succeeded to the presidency upon the death of the late James M. Robertson. He is survived by his widow and one daughter. The deceased was also widely known as one of Montreal's most fervent sportsman and lover of outdoor life.

Dehn is the Name to Look For

Products that bear the Dehn name have the advantage of many years of study of *your* problems behind them. The name Dehn on the *PeerlesS* Garage Drainage System, for instance, means complete health protection for the garage. Its cost is trifling compared to its value.

New Number Thirty Catalog Illustrating and describing some new and improved appliances upon request.

Your jobber can supply you.

"There are no substitutes equally as good."

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President

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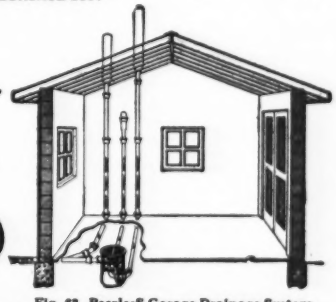
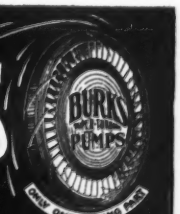
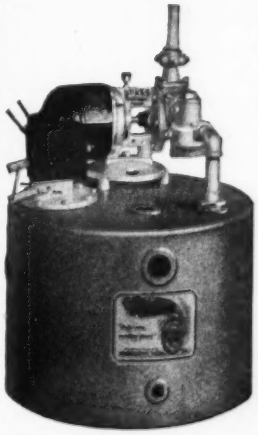


Fig. 62. PeerlesS Garage Drainage System correctly installed. Patented.

BURKS SUPER-TURBINE PUMPS





SERIES 4700

Your condensation pump need not be subjected to the grease, dirt and water usually found in the boiler room sump.

Mount the Burks Super Turbine Pump on TOP of the receiver tank. Its strong powerful suction, even when handling hot water will give you performance that is unsurpassed.

The Burks will not steam bind because it pumps air alone to the full pump rating. Investigate the Burks today for this service.

Send for Bulletin No. 91, which describes this new Condensation Return Unit fully. Write today.

DECATUR PUMP COMPANY DECATUR, ILLINOIS

The Master Salesman

(Continued from Page 64)

and laid before him the facts. If he waited until the business volume warranted the change, the building market would have advanced in proportion to everything else; inasmuch as he must make the improvement, he would make money on the investment in taking the market when it was down to low levels.

The Analysis

In the first instance, think how the contractor studied the ground he proposed to travel over. During the progress of "discovering" this prospect and his property, he learned that it had been in the family for a generation. He looked the property over with the eye and mind of an owner; estimated its value; investigated adjoining property and the neighborhood in general; got a picture of the trend toward colonial style in that community; noted the solid construction of the building, and what could be done by modernizing it. He discovered that the owner had had an idea of erecting a new building on the site for a home. He prepared himself with all the information he could gather before he approached his prospect.

When he finally went to the owner with his suggestion, he already knew enough about the value of the property to discuss that subject intelligently. Finding his prospect attentive, he chose the subject of value as his lever for controlling that interest. He skillfully concealed his knowledge of the owner's abandoned plans for a new building; he rightly realized the power of making profit influence the investor's mind, so he held on to his value-building idea until the owner finally confessed he couldn't see putting so much money into an old building. When that objection finally came out, he began carefully showing the comparisons of values in adjoining property; compared general appearances and effects. He kept right on his course of setting up values in money and effect, until he was ready to bring into action his plan for reviving the idea of a home for the owner.

He introduced that subject, by illustrating what a colonial living room would look like with burning logs in the fireplace with radiators in full view to spoil the homey, colonial effect. Reaching the climax in that scene, he lost no time popping the question, "Did you ever think of taking that property for your own use?" It brought to life the old idea. It brought out what the contractor needed—his reasons why he gave up the idea. It was easy then, to show him what $10,000 in remodeling would do to produce something better than a $60,000 investment in a new building.

It is the arrangement of proper sequence to each and all of the points in a sales interview that carries the prospect along on the ideas of the salesman. It is keeping each step covered, thoroughly in mind, so that when occasion arises, the salesman can revert to three, four, or a half dozen steps back, begin from there, rebuilding on a still more interesting basis than before; because he has learned still more of what was, and is, in the customer's mind, and is better equipped with ideas that will not conflict.

VACUUM QUICK VENT

VACUUM AIR VALVE

A Trial Order

Once you use the NEW DONNELLY FITTER VALVE you will see why it is *the* valve you can back up with your personal guarantee just as we do.

Its action is entirely thermostatic. No volatile liquids of any kind. No float or mechanical devices to get out of order or wear out.

It will stay open until every bit of cold air is eliminated from the system and will close instantly on steam.

A study of our catalog will help you solve your heating problems

Ask your jobber to show The New Donnelly "Fitter" Valve TODAY.

Donnelly Valve Company
MALDEN :: MASS.

Wisconsin Convention Dates Announced

The officers of the Wisconsin Master Plumbers' Association have decided to hold the next state convention on January 13, 14 and 15, 1931. The convention will be held at Milwaukee, and headquarters will be announced later.

◆

H. P. C. N. A. Standards Committee to Meet

A meeting of the Standards Committee of the Heating and Piping Contractors National Association will be held at the Association's headquarters in New York City on November 17th. Chairman Ralph S. Franklin of Boston will preside and it is expected that those present will include Charles E. Crone, Jr., Robert C. Morgan, George P. Nachman, Ray L. Spitzley, R. A. Wolff and W. H. Oleson, secretary.

◆

New Jersey M. P. A. Directors Discuss Plumbing Code

The board of directors of the New Jersey State Master Plumbers' Association, meeting on October 30 at the Capitol restaurant, Union City, N. J., among other things discussed the plumbing code that is up for passage. For the most part the meeting was given over to routine business. George H. Werner of Orange, N. J., a director of the National Association of Master Plumbers, reported on the meeting of the national officers held October 20-22 at Milwaukee, Wis. The date for the next meeting was tentatively set for November 20, at Newark.

◆

Boston Heating and Piping Contractors to Form Convention Club

At the meeting of the board of directors of the Heating and Piping Contractors Boston Association held recently, it was voted to establish a Convention Club of the Boston Association. Under the plan proposed, members of the association will start a fund similar to the well known Christmas Savings plan, each member contributing a certain amount monthly. The total amount will become available to members about the 15th of May, 1931, for their use in paying their expenses to the forty-second annual convention of the Heating and Piping Contractors National Association. It was felt by the contractors that this "painless" method of paying for the convention trip would make it probable that the Boston Association will have a larger delegation at the 1931 convention than would otherwise be the case. It is expected that the association treasurer, Peter J. McMurrer, or the manager, W. H. Oleson, will be made custodian of the fund.

Bureau's Budget for 1931 Set at $101,000

The board of directors of the Plumbing and Heating Industries Bureau met in Chicago on Nov. 8. The board received the report of E. L. Flentje, secretary-manager, on the activities of the Bureau during the preceding ten months, adopted a program for next year, and set the Bureau's budget for 1931 at $101,000.

The board accepted with regret Mr. Flentje's resignation as secretary-manager of the Bureau to become commissioner of the National Plumbing and Heating Institute. A committee to interview candidates for the position was appointed and the executive committee was empowered to appoint a successor.

Members of the board expressed themselves as being well satisfied with the nature and extent of the activities of the Bureau during the preceding ten months. It was decided to continue during 1931 on practically the same basis, with emphasis placed upon regional management conferences, the publication of sales manual material in the monthly Bulletin, and general educational publicity for the plumbing and heating industries through the medium of editorial articles in newspapers and magazines.

As a result of the publicity efforts of the Bureau, the plumbing and heating industries have during the last ten months received more favorable publicity in the leading daily newspapers and influential magazines than ever before, it was pointed out in the report.

The Bureau has clippings showing that daily newspapers in all parts of the United States printed a total of 49,714 inches of Bureau prepared material on plumbing and heating and that weekly newspapers printed 14,540 inches. Twenty-four magazines printed articles on plumbing and heating written by the Bureau staff.

The total circulation of these newspapers was 170,904,913. The report pointed out that the injection of this vast amount of favorable editorial material into the magazines and newspapers should have the effect of creating a more favorable attitude toward the industries and decreasing sales resistance.

In the section of his report on regional management conferences, the secretary of the Bureau said that the Bureau's director of regional management conferences has, with the actual co-operation of local associations, conducted dramatic sales and management presentations in twelve cities since Aug. 1. The average attendance at these conferences was 233 and the total attendance was 2,793 master plumbers, wives of master plumbers, journeymen, salesman, and office employes of contractors, all of whom paid an admission price.

The purpose of the regional management conference

is fourfold, the report to the board pointed out.

1. It teaches salesmanship by visualizing good salesmanship before the contractor.

2. It demonstrates good business management by dramatizing both the good and the bad, and by showing the outcome of bad management.

3. It stimulates good will between branches of the industries and by a frank presentation of sore points before all branches at the meeting.

4. It offers a permanent basis for local educational work by bringing all branches together for presentation of a definite program.

Turning to the subject of the Plumbing and Heating Industries Bulletin, the secretary said that the Bulletin in its new form of a monthly sales manual has appeared since March 1, 1930, and that four issues have applied to the selling of plumbing merchandise, three have applied to the selling of heating merchandise, and two have applied to the selling of both heating and plumbing.

The average circulation of an issue of the Bulletin is about 19,000 copies. The program of securing information from contractors on practical selling methods, trying these methods in the field, and checking resulting material against manufacturers' knowledge has been followed in all issues. Contractors interviewed have come from all sections of the country.

◆

Bronx County Masters Organize Quantity Survey and Credit Bureau

The master plumbers of Bronx County, N. Y., who concern themselves with new work, recently organized a quantity survey and credit investigation bureau. In addition to an executive board, comprising Harry Sugarman, Frank Habeck, Philip Farbman, Hugo Rogers, Abraham Freigenberg, I. Tarlow, and Noah Wachtel, the management of the organization is under the supervision of Sidney Sugarman, who directs all credit inquiry, supervises the estimating department, and furnishes members with financial and business advice. The name chosen for the organization is The Plumbers' Mutual Welfare Association, Inc., with offices at 645 East Tremont Avenue, Bronx, New York City.

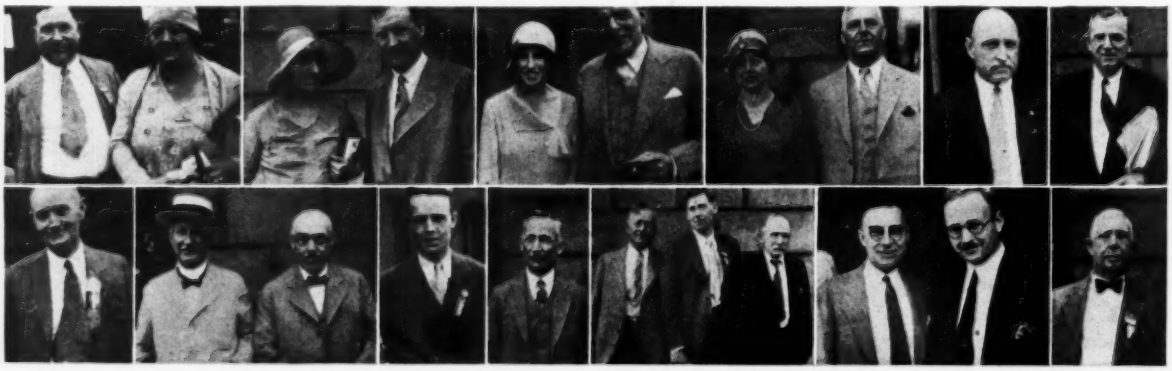
Regional Management Conferences Held in Wisconsin

Under the direction of the Plumbing and Heating Industries Bureau, of Chicago, three regional management conferences were held in Wisconsin in October. A total of more than eight hundred attended the meetings. At Madison, on October 14, 275 were present; at Milwaukee, October 16, the attendance was 347; at Green Bay, October 18, the audience numbered 180. The Milwaukee Master Plumbers' Association, the Fox River Valley association and the Madison association were sponsors for the meetings. The Wisconsin meetings were the ninth, tenth and eleventh regional management conferences directed by Joseph G. Hildebrand, since he undertook this work for the Bureau in July.

The account of the meetings, as given by the Plumbing and Heating Industries Bureau, is as follows:

In arranging the details incidental to the meetings in Wisconsin, Mr. Hildebrand was assisted by Carl J. Marsh, field secretary of the Wisconsin Master Plumbers Association. The success of the Milwaukee meeting is due to the co-operation which Mr. Hildebrand received from Walter Dusold, president of the Milwaukee association; Peter King, assistant secretary of the association; Walter Tesch, chairman of the entertainment committee; Lewis R. Friend; and others. In Madison, P. J. Reynolds took the initiative in helping Mr. Hildebrand with the meeting. He was ably assisted by Walter Hyland and some of the other leading contractors in Madison. Andrew Tweet, president, and George Reeke aided Mr. Hildebrand in the arrangements for the Green Bay meeting.

The Wisconsin meetings were similar to the previous Regional Management Conferences in Minneapolis, Fargo, Sioux City, Des Moines, and other cities in that men and women in the local industries participated in the one-act plays in which the right and wrong methods of salesmanship and business management were dramatically shown.



Top row: Mr. and Mrs. H. H. Schlopprizzi, Mrs. and Mr. F. J. Murphy, all of St. Louis, Mo.; Mrs. and Mr. William J. Lang of Chicago; Mrs. and Mr. H. J. Mersemann, St. Louis; Henry T. Callan, plumbing inspector, Pittsfield, Mass.; L. U. Noland, of the Noland Co., Inc., Newport News, Va. Bottom row: J. K. Miller, Flint, Mich.; James F. Traynor, Plattsburg, N. Y.; John J. Carey, Baltimore, Md.; Ernest E. Clayton, Denver, Colo.; Henry Ryffe, J. J. Noble, Charles Merton and Paul Becker, all of St. Louis, Mo.; H. R. Myers, general manager, Central Supply Co., Worcester, Mass.; L. Howard Goldbright, Jr., vice president and treasurer, Heating and Plumbing Financee Corp., Division of American Radiator & Standard Sanitary Corp., New York City; M. J. McGrath, New York City, chairman of Board of Examiners Plumbers. Photos taken at Boston convention of the N. A. M. P.

Following is the cast for the play, "The City Plumbing Company," as it was given in Wisconsin: Miss Janet Wilson of the American Radiator Co., Milwaukee, was the girl in the plumbing store. Miss Olivia Anderson of the Wisconsin Players was Mrs. Consumer in Madison and Green Bay, while in Milwaukee, she was assisted by Mrs. Bell Lippert of the Milwaukee Electric Railway and Light Co. In Milwaukee and Madison, George Hochstein of the American Radiator Co. was the salesman, but in Green Bay, George Ryan of the Kohler Co. took this part. Matt Sommers of the American Radiator Co. was the journeyman and Oris Dokker of the Kohler Co. was the master plumber. The selling demonstrations were given by Mr. Hochstein, Mr. Sommers, Henry Hoffman of the Standard Sanitary Mfg. Co. and Lewis Schreiber of Crane Co.

◆

Louisville Association Moves to Larger Quarters

The Master Plumbers Association of Louisville, Ky., provides a very excellent indication of growth, in that it has been forced to secure larger quarters. The old office and meeting room at Fourth and Liberty street, occupied by the association for a long period of years, was leased at a time when the body hardly figured to ever have more than 40 to 45 at a meeting. Since consolidation with the Contracting Plumbers Association a few months ago, this increased membership and new members, not previously connected with either body, had resulted in a membership of around 90 or more, and the old quarters proved entirely too small to accommodate the meetings.

Another difficulty of the old quarters lay in the fact that they were in the heavily congested district, where parking space is always at a premium. Consequently, in October the association moved to 704 Logan street, just off Broadway, at a point where there is plenty of auto parking space at all times, and it is possible to reach the new quarters without entering heavy traffic. The organization has its private offices, which are modern in every way, while in the same building is a hall with seating capacity of 300 to 400, which it may use two nights a week if it desires.

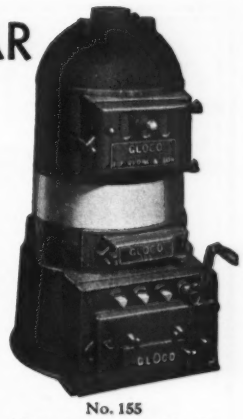
◆

Southern California M. P. Federation Elects Officers

The Federation of Merchant Plumbers of Southern California held its anniversary meeting on October 18, at the Virginia Hotel, Long Beach, Calif., with the Long Beach Merchant Plumbers' Association acting as hosts. Election of officers was the most important business before the delegates, and their choice again fell upon President Louis E. Remy of Long Beach, who was re-elected president, and Walter E. Wilmot of Venice, who was re-elected secretary-treasurer. Clyde Hickman, of Long Beach, was elected vice president of the federation. Ray Walter, Bakersfield; Urban Ziegler, Pomona; C. F. Carlson, Santa Ana, and Erling Rohde, San Diego, were elected to the board of directors.

At 6:30 a fine turkey dinner was served, and during dinner members enjoyed a musical program under the direction of Edward W. Greene, program

AN ALL-YEAR ROUND BUSINESS— ON TANK HEATERS



No. 155
(*Also in larger capacity—No. 280*)

Whether it's a home, apartment house, garage or business building, there's a GLOCO Red Band Tank Heater of just the right size to supply hot water in that building. Forty-five sizes to choose from—each tested to 300 pounds and guaranteed to 125 pounds working pressure.

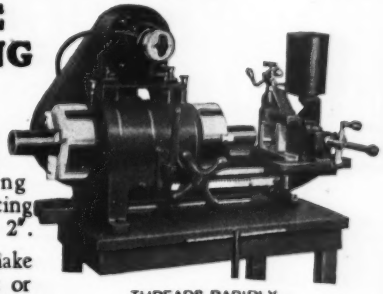
This comprehensive GLOCO line opens up a *bigger market* for every plumbing and heating contractor. There are tank heater prospects all the year round.

Ask your Wholesaler.

EVINS F. GLORE & SON, Inc.
Grand Central Terminal Bldg. New York City
"LOOK FOR THE RED BAND OF QUALITY"

TRADE MARK
GLOCO
RED BAND TANK HEATERS

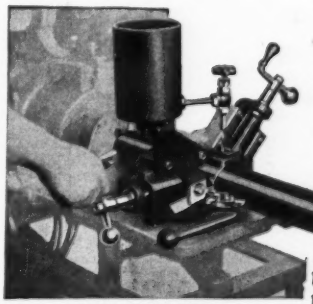
CUTS PIPE THREADING COSTS!



THREADS RAPIDLY

A full-fledged Portable Pipe Machine for Reaming, Chamfering Threading and Cutting Off pipe from ⅛" to 2".

Uses any standard make of solid square right or left hand pipe or bolt dies.



CUTS OFF RAPIDLY

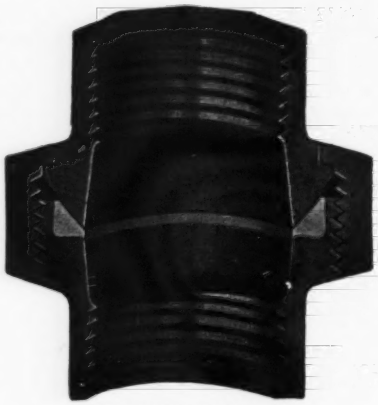
Weighs 250 pounds. Operates off either A. C. or D. C. lighting circuits. Is sufficiently powered to drive geared heads on the larger pipe, up to 6 inches. A real pipe machine at a price you can afford. Ask us about it today. Give us the name of your supply dealer.

PEERLESS MACHINE CO.
Racine - Wisconsin

Eastern Canadian Representative:
J. Edwin Newsome, 161 Castlefield Ave., Toronto, Ont., Canada

"CHICAGO"
Pipe Threading Machines Production Precision
Latest and Most Advanced Types on the Market
Chicago Pipethread Machine Co., Racine, Wisconsin
Offices and Factory: 1621 Racine Street

IMICO UNIONS



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Made of refined Malleable Iron with Brass Seat inserted in place by powerful pressure so that it cannot become detached.

Approved by Underwriters' Laboratories.

ILLINOIS MALLEABLE IRON CO.
Chicago, Ill.
Manufacturers Full Line Iron Pipe Fittings

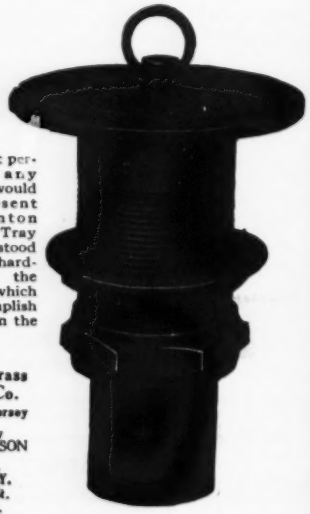
TRENTON BRASS PRODUCTS

T B T B

Past Performance

LOOK FOR OUR CATALOG IN PLUMBING & HEATING CATALOG

Look to the past performance of any product if you would judge its present worth. Trenton Brass Wash Tray Plugs have withstood the test of the hardest jobs with the same ease with which they can accomplish those to come in the future.



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Trenton, New Jersey

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ROLLIN C. WILSON
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New York, N. Y.
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Elizabeth, N. J.

T B T B T B T B T B

chairman. Clyde Hickman, acting as toastmaster, introduced H. R. Girard, president of the Long Beach association, and Mayor Asa E. Fickling. Mrs. J. F. Burch, president of the Long Beach Women's Auxiliary, welcomed the ladies and invited them to the card room. C. A. Gummere was the main speaker of the evening. Speaking on the subject, "A Clear Look Ahead," he gave a forceful talk on merchandising in its various phases.

State President Claude Hickman spoke of the bereavement suffered by the state association in the death of Charles Hutton, state secretary. President Remy also addressed the delegates on the subject of close co-operation between the three branches of the industry.

A large silver loving cup was won by the Whittier Master Plumbers' Association for the largest percentage of gain of new members. State President Hickman made the presentation speech, and T. J. Horne, president of the Whittier association, accepted the cup on behalf of his organization.

The meeting was preceded by a golf tournament in the morning. Low net, 88, was held by Herbert Fielding, Los Angeles, and low gross of 87, by Louis Remy, among the members. Among the visitors, Van Hickman had low gross of 81, and L. P. Mulligan held low net of 85.

◆

Pittsburgh Chapter A. S. H. V. E. Hears National Officers

The Pittsburgh Chapter of the American Society of Heating and Ventilating Engineers held its second regular meeting of the fall in the assembly room of the Fort Pitt Hotel, on Monday, November 3. L. A. Harding, national president of the Society, after discussing the problems connected with entertaining a convention, addressed the meeting on "Utilization of the Sun's Energy." A. V. Hutchinson, national secretary, gave the members advice, gleaned by experience, covering their duties as hosts to the coming convention of the national society. C. W. Farrar, national treasurer, gave a talk on "Memberships and the Society Attendance."

◆

New Association to Be Formed in Utah

It is expected that a local association of sanitary and heating engineers will be formed at Logan, Utah, during November, according to W. A. Rupea, executive secretary of the Utah State and Salt Lake City Associations of Sanitary and Heating Engineers, who recently returned from a trip to that city. Mr. Rupea states that all of the masters have expressed their willingness to form such an organization and the final details are expected to be consummated during the next few weeks. The new local will be the fourth in the state, the others being the Salt Lake City, Ogden, and Utah County Associations of Sanitary and Heating Engineers.

He also met with the Ogden association on his trip to the extreme northern portion of the state. Mr. Rupea states that through the willingness of the individual members of that organization to guarantee that their work is in accordance with the pro-

Attractive window display of J. F. Weinheimer, master plumber of Buffalo, showing combination refrigerator-sink he recently designed

posed state sanitary code, association contractors have secured preferences in several cases over the low bidders. William R. Offerman, president of the Ogden organization, presided at the meeting.

The same plan of individual members guaranteeing that their work is in accordance with the proposed state code is also working with increased effectiveness in Salt Lake City, according to Mr. Rupea.

◆

New York Plumbing Industry's Golf Association Holds Second Tournament

The second tournament of the Plumbing Industry's Golf Association of New York was held October 16 at the Kings Ridge Golf Club, Rye, N. Y., when approximately sixty master plumbers, wholesalers and manufacturers enjoyed a day especially suited for the game. Some of the players, arriving in the forenoon, got in nine holes before lunch, but the scores of the afternoon round of eighteen holes were the basis for prize awards.

George E. Gibson, Jr., with a low gross of 84 was awarded a golf bag as first prize, and Thomas J. Dorsey, with four more strokes, received a poker set as second, while P. R. Tully, with a low net 66, and Eugene Duklauer, with a 73, were awarded a brush set and thermos, respectively. These were the prizes distributed among the master plumbers. The wholesalers to earn awards were T. A. Johnson, gross 73; Kenneth Carmer, gross 83; G. B. Van Buren, net 67, and E. F. Keating, whose net was 70. These players in the order named were presented with a beverage shaker, cigarette case, beverage container, and a refreshment set and tray.

In the group of manufacturer players, Al. Powers, with a low gross 85, was awarded an electric clock, and L. S. Rothwell, with 89 strokes, was given a set of book ends. A. M. Hale received a cigar case with a low net of 68, and Fred C. Allen, with one more stroke, was given a beverage container.

The three prizes in the kickers' handicap, one in each of the branches, were won by George E. Gibson, Sr., who had a card of 93 in the master plumber group; Leo

The scores of the other players were as follows:
M. O'Neil, who carded a 90 in the wholesaler group, and C. S. Coleman, with a 107 in the manufacturer

"HOT DOG!"
FIREPOT WATER HEATERS
LOW IN PRICE!
HIGH IN CLASS!

No. 1	BRASS . .	$2.75
" 2	" . .	3.50
" 1	IRON . .	1.25
" 2	" . .	1.45

Less In Quantities

ASK YOUR JOBBER
OR
WRITE US FOR SPECIAL
FIRST ORDER OFFER

20 TO 60 GALS. CAP.
1" TAPS ON 9" CENTERS

NO LEAKY JOINTS

CAST BY
The RICHMOND FOUNDRY & MANUFACTURING CO Inc.
RICHMOND, VIRGINIA
"A DEPENDABLE SOURCE OF SUPPLY"

CHANGE THE CHAIN

Do a lasting favor for your customers and friends—change the chain to Bead. On lavatories, trays and tubs, change the chain to Bead. It's strong, non-kinkable and clean, suitable for private home or public building. When next you order from your jobber, change the chain to Bead.

THE BEAD CHAIN MFG. COMPANY, BRIDGEPORT, CONNECTICUT

USE BEAD CHAIN FOR PLUMBING
Trade Mark Reg. U. S. Pat. Off.

group. The awards were a beverage shaker, an umbrella and a beverage flask, respectively.

After dinner, Morris Jarcho, chairman of the association, who arranged the entertainment and acted as host, addressed the gathering and expressed his appreciation of the apparent enthusiasm toward the idea of the association which he had instituted at a meet on September 4. Harry Rose, assistant captain, showed several motion pictures, among which were some taken during the summer at the Manhattan Master Plumbers' outing. John F. Murphy, captain, distributed the prizes.

PLUMBERS' SCORES

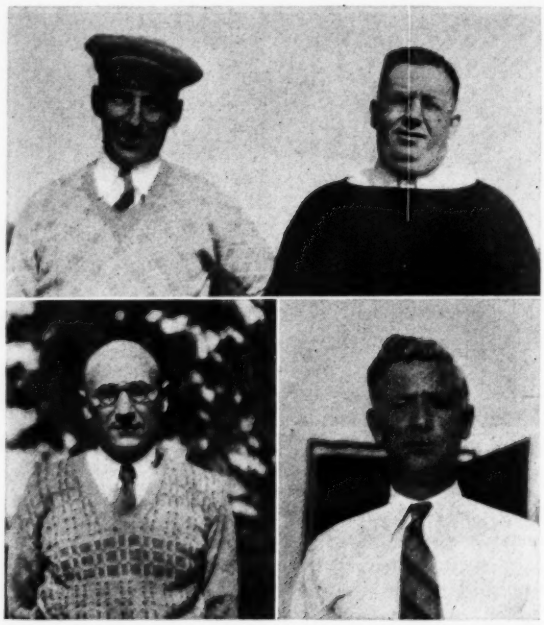
	G.	H.	N.		G.	H.	N.
John Well	94	18	76	I. Pollack 115		40	75
J. J. McLaughlin.	119	30	89	W. Waters	94	16	78
F. Canade 124		30	94	Ph. Farbman 120		40	80
W. Childs 112		30	82	C. Mentzinger...118		40	78
C. Bick 127		30	97	J. Heck 149		40	109
T. H. Brady.....110		33	77	T. McCormick....126		40	86
F. Frederikson ..113		24	89	H. Smith 173		40	133
J. Nestor 120		30	90				

JOBBERS' SCORES

	G.	H.	N.		G.	H.	N.
H. G. Schneider.	115	27	88	W. S. Hunter....105		30	75
Carl Henzel 111		27	84	H. Rose 112		35	77
E. Edwards 104		24	80	P. R. Mork.....110		24	86
J. Katz 109		30	79	Morris Jarcho (no card).			
M. Smolka 104		30	74	A. Altman (no card).			
E. Schwartz 107		33	74	E. A. London (no card).			
G. W. Warner...	97	25	72	Lew White (no card).			

MANUFACTURERS' SCORES

	G.	H.	N.		G.	H.	N.
J. S. Weaver....	91	19	72	Chas. Wall	90	19	71
E. V. Fuller.....116		30	86	W. H. Murphy...101		20	81
D. Warth	96	18	78	J. F. Murphy...	92	12	80
J. Edwards 114		24	90	H. P. Smith.....117		30	87
J. Woods	96	24	72	T. N. Ide.....102		27	75
H. Garrity	90	19	71	A. S. Foster.....118		35	83



Top row: W. S. Hunter, vice president of United Plumbers Supply Co.; T. J. Dorsey, T. J. Dorsey Plumbing Co. Bottom row: Morris Jarcho, president of Jarcho Bros., Inc.; Joseph F. Heck, president, Master Plumbers Association, Manhattan. Photos taken at the meet of the Plumbing Industry's Golf Association of New York City

	G.	H.	N.		G.	H.	N.
Tom Foley 104		25	79	C. P. Gabosch...106		25	81
W. R. Nygren...133		40	93	C. J. Bray.....121		40	81

4 OUT OF 5 *of your customers need*

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Minfelt Jackets for Furnaces and Hot Water Tanks

Minfelt Pipe Coverings for Steam and Refrigerating Lines

Pyrocoat for Wall and Ceiling Insulation

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Your old customers will be greatly interested in knowing what Mineral Felt will do for them. They know you and have confidence in you.

So why not make an effort to tell them the story of Mineral Felt? It is an efficient insulation that reduces fuel costs from 25 to 40 percent. It improves the operation of the furnace or boiler. It stops heat radiation. It aids heat distribution.

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Your Profit Both sales and installations are far easier and simpler than with any other insulating medium on the market.

Standardized kits, each complete with required Mineral Felt blocks, paste, bands, and accessories, make easy storage and handling. You can quote instantly on the job.

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Write for copy of our "Home Survey Chart," which is being used very successfully by a great many plumbing and heating engineers, to materially increase their sales of Mineral Felt.

The Mineral Felt Insulating Co.
2245 Albion St. Toledo, Ohio

Philadelphia Golfers Play Pine Valley Course

The Heating & Ventilating Golf Association of Philadelphia wound up the 1930 golfing season by playing the celebrated Pine Valley course as guests of Thomas W. Cooper. The Pine Valley course, situated among the pines near Clementon, N. J., with its sand and water hazards tries the golfing finesse of any golfer. Any one of its expertly designed and trapped 18 holes is enough to ruin a good score and, as a consequence, scores run higher. Wednesday, October 22, was no exception when the final scores were posted for the association members, led by Captain Culbert.

At the dinner in the evening, President George Kappel was given a sand wedge niblick as a gift from the association, as a token of appreciation. John Murdock was declared winner of the H. J. Carr Trophy Cup, making his second leg on the cup.

The scores turned in were as follows:

	In	Out	G.	H.	N.
Morning Round					
Dr. Cairns	49	55	104	*	...
Wm. Speakman	67	70	137	17	120
Wm. Robelen	71	62	133	17	116
Lee Nusbaum	59	61	120	15	105
Roy Eichberg	72	57	129	23	106
Wm. Culbert	50	42	92	8	84
Chas. Neeld	64	60	124	*	...
J. Murdock	56	55	111	14	97
Joe Luke	48	59	107	10	97
Dr. Pierson	52	50	102	*	...
Tom Cooper	49	53	102	5	97
Ray Bolsinger	53	53	106	9	97
Geo. Kappel	60	68	128	24	104
C. Thompson	56	58	114	17	97
D. Smith	62	57	119	20	99
Wm. Brewton	62	70	132	25	107
Afternoon Round					
Chas. Williams	56	51	107	10	97
J. Hemphill	59	50	109	8	101
T. Cooper	46	47	93	5	88
Ray Bolsinger	42	49	91	9	82
Roy Eichberg	65	..	...	..	...
Wm. Culbert	51	..	...	..	...
John Murdock	59	..	...	..	...
Geo Kappel	67	72	139	24	115
C. Thompson	54	60	114	17	97
D. Smith	59	60	119	20	99
Wm. Brewton	76	75	151	25	126
Wm. Robelen	65	65	130	17	113
Lee Nusbaum	60	60	120	15	105
Dr. Cairns	50	52	102	*	...
Wm. Speakman	50	54	104	17	87
Joe Luke	..	..	...	..	...
Dr. Pierson	..	..	...	..	...

* Guest.

◆

Death of William C. Mapes

William C. Mapes, of Mapes Brothers, died at his home in Rockford, Ill., on October 25, after an illness of two weeks. Mr. Mapes was born in Rockford July 22, 1875, and attended the public schools there. At the age of seventeen he began an apprenticeship to the plumbing trade, and later worked as a journeyman for a number of years. Twenty-eight years ago he entered the business as a master plumber, with his brother Charles, under the firm name of Mapes Brothers. After the death of his brother in 1916 Mr. Mapes continued the business under the same name. He was always an enthusiastic association member, seldom absent from a meeting until about a year ago, when ill health prevented him from attending regularly. He is survived by his son, Rupert.

What's back of your business?

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Complete files of the leading business papers are kept; books which contain time and labor saving information are also kept. These libraries save their owners hundreds and often thousands of dollars each year.

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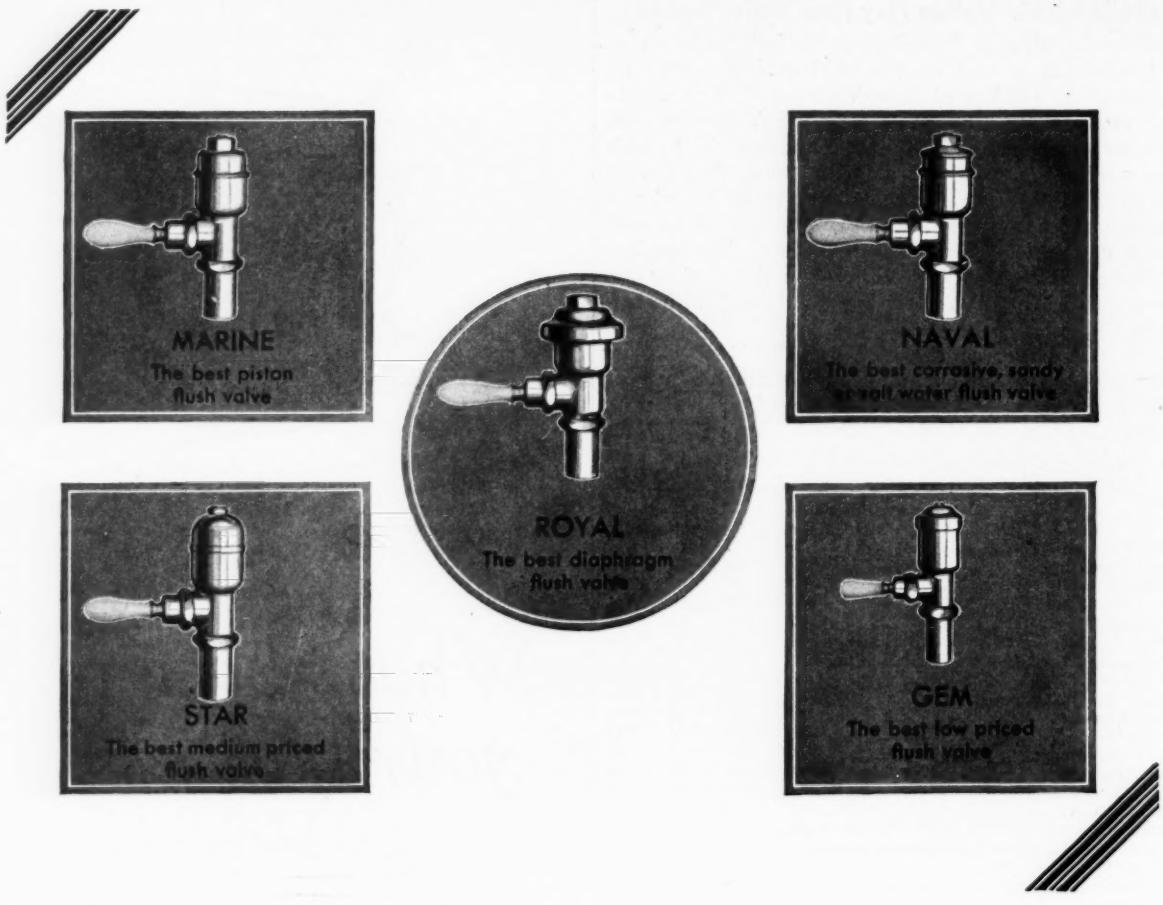

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It brings you the ripened experience of nearly a quarter of a century devoted to the manufacture of fine flush valves exclusively . . .

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TAMPA, FLA.
WASHINGTON, D. C.

MARKETS

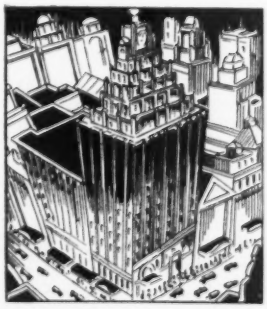
BUSINESS REPORTS FROM LARGE JOBBING CENTERS

COLLECTIONS of wholesale and manufacturing firms throughout the country are at least six per cent better than they were a month ago, according to November report of the National Association of Credit Men.

"From the credit point of view, the outstanding feature of the present business situation is this country-wide improvement in collections," said Dr. Stephen I. Miller, executive manager of the association. "We can see in it a dependable sign of better things just around the corner."

Business in the plumbing and heating industry was centered mainly on the heating field during the past two weeks; demand for boilers and radiators holding at a fairly good level in most territories. Plumbing materials, such as enameled ware and pottery, enjoyed only a moderate turnover. Soil pipe, most types of fittings, wrought iron pipe, and other roughing-in items, displayed little activity. Except for a price advance announced by several brass nipple manufacturers, the market was unchanged. Sources of production are shipping promptly.

September shipments of enameled sanitary ware, as reported to the Bureau of the Census by 22 manufacturers comprising practically the entire industry, totaled 204,868 pieces, as compared with 200,378 pieces in August, 313,886 in September, 1929, 327,412 in September, 1928 and 384,161 in September, 1927. September shipments of vitreous-china plumbing fixtures, including all vitreous chinaware which in regular practice is connected with a drainage system, as reported by 26 manufacturers to the bureau were 184,597 pieces, as compared with 200,896 pieces in August and 272,776 in September, 1929. New orders for 1,254 steel boilers were placed in September as reported to the bureau by 81 manufacturers, comprising most of the leading firms in the industry, as compared with 1,371 boilers in August and 1,910 in September, 1929.



NEW YORK

Cold Weather Increases Sales

TRADE circles in the metropolitan area were encouraged by an active demand for heating materials during the past fortnight. The warehouses of several wholesalers visited showed signs of a heavy movement of goods for the first time in several months, and it is said that counter sales are especially gratifying at present; not that business here is booming—for new construction under way is considerably below that of a year ago—but there is evidence of a long deferred replacement demand making itself felt in no uncertain manner. Such requirements are said to be proportionately more profitable to all concerned than new contract work.

In the opinion of several interests interviewed, the trade in this area now rests on a more substantial foundation than for a period of two years, and inasmuch as this is apparently an anomaly in a period of depression affecting all lines, it is creating considerable comment. At the

risk of venturing into an academic discussion, many manufacturers and wholesalers feel that some prominence should be given at this time to a conservative appraisal of current economic conditions as they affect this industry, and in general it may be stated that trade circles are guided by the following consensus which explains the confident attitude here.

These, in brief, are: the elimination of several weak elements of competition which tended to undermine the price structure; the close prices being made owners by contractors, which bring back to regular trade channels business which had hitherto been placed through other than regular wholesalers or institutions not primarily concerned in this industry; the apparent stabilization of prices on a firm basis; improved credit conditions occasioned by the elimination of the speculative builder through the new lien law; the fact that this industry is fundamental, concerned with necessities, and not subject to the caprices of depression in the luxury trades; and finally, residential building contracts have recently shown marked improvement in this area.

To be sure, it is conceded that many exceptions and qualifications may be made with regard to the above, but in the main wholesalers and manufacturers are proceeding in this territory with more confidence than has been felt for some time; wholesalers have been buying somewhat more freely during the past fortnight, although with year-end inventory in view. Inventory will not be as serious a bar to manufacturing activity this year as previously, it is reported, inasmuch as distributors' stocks have in most cases been at low working levels for six months past.

New construction of all types undertaken in the metropolitan area of New York during October totaled $80,053,300 according to F. W. Dodge Corporation. This compared with $81,572,900 for September and $80,408,200 for October, 1929. The past month's contract record showed $46,114,700 for new residential building, $26,640,000 for non-residential building, and $7,298,600 for public works and utilities. Residential building awards in October, totaling $48,114,700 compared with $38,520,100 for September and $38,795,700 for October, 1929.

For the year to date new construction undertaken in this territory totaled $819,699,200 as contrasted with $985,103,000 in the corresponding ten months of 1929.

Soil Pipe

The price of soil pipe remains unchanged among manufacturers and wholesalers and buying is seasonally light at this time. Aside from a few operations in the suburban areas, there is but little activity in this commodity among contractors. Stocks on hand are of fair working proportions for this time of year according to most wholesalers, and plants have adjusted production closely to consumer demand.

Pipe—Steel, Brass and Wrought Iron

The usual increase in shipments of pipe from plants to wholesalers was experienced about November first, although in most quarters it is stated that the tonnage was lower than that of a year ago. It is not expected by most sellers that demand on plants will show much variation between now and the first of the year as wholesalers are working inventories on a close range basis in most instances, and requirements for some time past are said to have merely reflected contractor demand for replacements and renovations. Prices of all types of pipe remain unchanged from the time of our last report.

Fittings

Several manufacturers of steel pipe nipples advanced prices on the first of November and wholesalers' sheets were promptly revised to correspond. Brass nipples were also advanced by several manufacturers. Brass fittings and malleables remain unchanged from the time of our last report. In general, inventories of wholesalers are at fair working levels, as plants in most instances are able to ship requisitions promptly.

Pottery

In the main, it is stated that requisitions for pottery have not kept pace with the increased demand occasioned by the usual seasonal repair work; in past years the upturn in requisitions for heating materials was often accompanied by an increased demand for pottery and the lack of such requirements this year has been a disappointment to many interests in the trade. However, there is a continuance of good demand for colored ware in the outlying sections, but it is stated that such requirements do not make up for the dearth of staples. Prices are being firmly maintained by all interests and inventories are of fair working levels at all points of distribution. Shipments are leaving sources of production on schedule, and no complaints are heard regarding this phase of business.

Enameled Ware

Activity in enameled ware continues on a basis considerably below that of a year ago, although the demand for specials is said to be relatively better than at that time. This is particularly true in the suburban areas. Inventories among wholesalers are of moderate size but are considered ample to take care of the current contractor demand. Stocks on hand at plants are described as adequate in most instances, although some delays are experienced in making shipment of colored ware. Prices remain firmly established by all interests and there have been no changes in the published quotations of manufacturers since our last review appeared.

Plumbers' Brass Goods

During the past fortnight the demand for replacement work has been fairly well maintained; although manufacturers state that wholesalers are ordering in very small quantities as a rule and in most cases require immediate shipment, thus reflecting low inventories. In general, wholesalers are of the opinion that repair work will supply the greater part of the demand well into the new year, at which time contracts being let at present will cause requirements for new construction, a factor which has not helped the industry for some six months to any appreciable extent. There have been no changes in prices in either cast or tubular brass since the time of our last report by either manufacturers or wholesalers.

Range Boilers

Replacement demand in this commodity continues to afford a well maintained turnover which in many instances is spoken of as being better than that of a year ago. There are some gratifying requirements for storage tanks. Prices remain unchanged by manufacturers and wholesalers alike and it is said that shipments are made promptly as inventories are well adjusted to demands.

Boilers and Radiators

Requirements for repairs and replacements have been well maintained during the past fortnight, especially as the advent of cold weather has brought out a latent demand which is somewhat above the expectations of representative wholesalers interviewed. It is reported by foundries that parts and miscellaneous business is satisfactory but that requirements for new buildings are no better than anticipated from building contracts let sixty to ninety days ago. However, this situation is expected by sellers to remedy itself after the first of the year when installations are required on contracts let during October which have shown a marked improvement in residential building. No difficulties are experienced in making prompt shipments of most items by plants, although it is said that wholesalers as a rule are depending on manufacturers to a large extent to enable quick delivery to contractors.

CENTRAL WEST

Chicago Suburban Building Gains

SIXTEEN out of forty-four of Chicago's suburbs registered gains in building construction during October as compared with the preceding month of September. The increase was 19.2 per cent. Suburban construction took second high place for the year, according to the building survey department of S. W. Straus & Co.

Permits issued in the forty-four suburbs reporting totaled $3,467,191 in October as against a total of $2,908,156 in the month preceding. Compared with the October, 1929, total of $5,751,698, a loss of 39.72 per cent is registered.

In the comparison of October, 1930, with October, 1929, the metropolitan area, including Chicago and suburbs, registered a loss of 65.40 per cent. October, 1930, slipped back 39.29 per cent when compared with September of this year, in the metropolitan area.

Reports from manufacturers in this section indicated that new orders for boilers and radiators were not quite as numerous as during the preceding fortnightly period. However, a fairly satisfactory call prevailed for repair parts, and, totaled with the orders for complete systems, the volume was sufficient to give heating materials first place in activity in the Central West market. Finishing materials such as enameled ware, pottery and plumbers' brass goods did not experience much of a turnover, master plumbers' requirements maintaining much the same level as during the earlier fortnight. Almost without exception, manufacturers are shipping their products on schedule.

Soil Pipe

A slight gain in sales was reported by at least one manufacturer in this territory, following the meeting of the Central Supply Association in Chicago, but this was not sufficient to give any volume to the soil pipe business transacted in the territory. For the most part, orders reaching makers are for small lots. Warehouse business is fair. Foundry shipments are prompt and prices are unchanged.

Pipe—Steel and Wrought Iron

Demand on the part of heating contractors for steel pipe held at much the same pace as had prevailed during the preceding two-week period, and the bulk of pipe moving was of the smaller sizes. Wholesalers' pipe racks are only moderately filled, and distributors are purchasing as actual needs arise. Wrought iron pipe salesmen report little new in the way of business news pertaining to their commodity. Buyers for wholesale houses are limiting their purchases to immediate needs, which are relatively light. Mills are shipping promptly on both steel and wrought iron pipe, and have not changed their published prices.

Fittings

Activity in the fittings market, outside of the types required in connection with the installation of heating systems, maintained a moderate pace during the past fortnight. Jobbers have sufficient stocks to take care of current business promptly and makers are granting quick replacements. Prices have not been changed by manufacturers.

Enameled Ware

Business in enameled ware was more or less quiet during the period covered by this review, with only a moderate activity among master plumbers in work requiring fixtures. Special pieces are reported in fair demand for remodeling and repair work. Jobbers are coming into the market only when material is required to fill-in low inventories. Shipments at factories are prompt and prices are unchanged.

Pottery.

According to wholesalers interviewed, master plumber demand for pottery was moderate in nature during the fortnight just gone by. This situation is reflected in the business reaching manufacturers, most of which is for small quantities of ware. Potters have sufficient stocks of staples to grant quick shipments.

Plumbers' Brass Goods

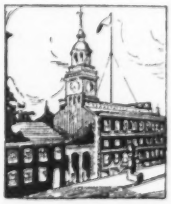
Brass goods salesmen covering this territory say that orders were scattered and usually of small size during the two-week period. Wholesalers' stocks, generally, are sufficient to take care of current demand. Factories are shipping without delay, and published prices of manufacturers are unchanged.

Range Boilers

The range boiler market maintained about the same position where demand, supply and prices are concerned as marked business in this field during the preceding fortnight. Makers' prices are reported firm at current sheets and factory shipments are prompt. Buying is confined mostly to actual needs.

Boilers and Radiators

According to some reports, new orders for boilers and radiators fell-off somewhat during the past two weeks, but at the same time calls for repair parts held at a satisfactory level. Factories are shipping without delay and there have been no changes in makers' published prices.



MIDDLE ATLANTIC

Slight Seasonal Decrease Is Felt

WITH the exception of a few commodities, the advent of November brought with it reports of a slight seasonal slackening in business. The sales of heating materials, which showed a decided upturn during the past two months, are now reported by heating interests to be declining. However, several producers' representatives interviewed are of the opinion that the present lapse is only temporary in character, and that the approaching weeks will again show favorable results as the weather becomes definitely colder and renovations in heating systems become necessary. Wholesalers in this territory say that business is holding a fairly good pace, when compared with other monthly volumes for the year, but a slight decline in the demands of master plumbers has taken place since the start of the present month. Those interviewed freely admit that requirements for new construction are small as has been the case since last year, and renovation and repair work accounts for the bulk of the activity among master plumbers and heating contractors. Purchases by jobbers are reflected to producers in practically the same proportions as material is ordered out by contractors. Manufacturing sources apparently are amply stocked to meet all current demands with only minor delays in more special items.

Construction valuation as reported by the F. W. Dodge Corporation for the 40th and 41st weeks shows a decline from the previous two-week period. The total figures were $8,035,800 and $5,248,700, respectively.

Soil Pipe

Reports emanating from wholesalers and salesmen in this section indicate that little, if any, change was

apparent during the period in the volume of soil pipe sales. Tonnages are said to be unusually light for the season, and this condition has existed for some time, it is reported. Some new operations are requiring pipe, but they are insufficient to cause any appreciable gain in volumes. Jobbers are carrying light stocks, and are buying only as the need is created. Prices are unchanged. Manufacturers, although carrying only moderate stocks, are able to make prompt forwardings on staple sizes.

Pipe—Brass, Steel and Wrought Iron

The movement of steel pipe is said to have encountered a seasonal decline at the beginning of the month, when compared with the previous 30-day period, although the tonnage of steel pipe used for heating installations holds a fairly good pace. Wrought iron pipe tonnage is reported by mill salesmen as being a little larger during the fortnight in comparison to previous weeks. Brass pipe volumes are reported to have declined during the period, the increased demand evidenced during October failing to hold over into this month. Pipe prices remain unchanged and mills are making deliveries without delay.

Fittings

More inquiries, and a slight increase in the number of orders received prompted producers' representatives in this section to say that business has a brighter aspect insofar as fittings are concerned. Orders in the main are for small quantities, as dealers are only purchasing to fill-in their stocks. Heating installations continue to require the majority of the commitments. Prices remained firm at the published sheets, and little difficulty is reported in securing goods on time.

Enameled Ware

Commitments on the part of master plumbers for enameled ware continues to be of light nature, according to wholesalers interviewed. A fairly good turnover for this season is taking place in the case of fixtures used for renovation work, but the decline in new building and the subsequent lessening in requirements for fixtures causes volumes for the period to fall below those of last year. Fixtures of a special nature are being consumed in fair quantities. Wholesalers are carrying light stocks, but manufacturers are forwarding on schedule. Prices are unchanged at manufacturing points.

Pottery

Pottery orders for specific projects are of fair seasonal proportions, considering the decline in construction, and there is reported to be a fair demand for the more special pieces of ware, as is the case with enameled ware. The lack of speculative building in any sizeable proportions has affected the sales of staple pieces, and jobbers are carrying only minimum stocks of these items. No change in price sheets has been announced by potters. Deliveries in most instances are prompt.

Plumbers' Brass Goods

Jobbers report that contractor demand for cast and tubular goods remained at approximately the same level as in recent periods. The sustained demand has not made any change in wholesaler buying policy, as small fill-in orders are the rule. Curtailed production schedules by producers has caused relatively low inventories at plants, but shipments are generally prompt.

Range Boilers

Reports indicate that the movement of range boilers can best be characterized as being slow at this time. Activity had been maintained at a reasonably good pace during past weeks, but with the advent of November a slackening took place. Inventories at plants are said to be of good working proportions and no delays are experienced in delivery. Range boiler prices continue unchanged.

Boilers and Radiators

Boiler and radiator manufacturers' salesmen interviewed report a decline in wholesaler requirements during the fortnight, but a renewal of the activity witnessed during September and October is looked for with the arrival of colder weather. No price adjustments have been made, and deliveries are completed with only occasional delays.

NEW ENGLAND

Decrease In Shipments Is Apparent

THE majority of wholesalers of plumbing and heating commodities in the New England area have experienced some decline in their October volumes and in their dispositions for the month thus far. The trend of construction indicates considerably less activity in residential developments and a shortening of major projects. Representatives of manufacturers state that the volume of business outstanding is somewhat below that recorded for early November of former years and that receipts are earned only through considerable expenditure of time and energy. On the other hand, there is being consummated a fairly good amount of work which was incepted during foregoing months and which abets in some way makers' and distributors' weekly shipment records. Heating equipment continues to hold its seasonally prominent position, although manufacturers report some falling off in orders for new installations.

Stocks at jobbing points are being kept well assorted and sufficient for near-at-hand requirements of the plumbing and heating trade, yet wholesalers, mindful of the not far distant inventory period, are paring their balances as far as safety will permit and are ordering in small quantities. Then, too, they experience no difficulty in procuring delivery of materials when needed, for all manufacturers are apparently in position to make shipments readily. It is said that, despite curtailment of production at many plants, there are sufficient reserves of supplies to meet without delay all requirements of distributors. No price changes of consequence were effected by manufacturers during the period covered by this report.

Soil Pipe

The tonnage of soil pipe being consumed in this territory does not account for any spirited movements either to or from local distributing points. Wholesalers are well equipped to supply present light demands of plumbing contractors but at the same time show no inclination to augment their stocks. Foundry representatives report that their receipts are a little below normal for this season of the year, yet there is granted a scattering of carload orders and a fair amount of pick-up business. Delivery service from sources is excellent. No price changes have been effected by producers.

Pipe—Brass, Steel and Wrought Iron

Brass pipe manufacturers' quotations have been re-established on a firmer basis and although their dispositions are not particularly numerous weekly receipts are satisfactory. Heating contractors are absorbing steel pipe in such quantities as to grant wholesalers active shipments with consequently good commitments in carload quantities reaching mill representatives' hands. The rate of consumption of wrought iron pipe has slowed up somewhat, makers stating

that the demand experienced does not meet with their expectations for this time of year. Production of all classes of pipe has been toned down, yet reserves are of such nature as to warrant quick shipments to distributors. Makers' quotations are firm and unchanged.

Fittings

The current seasonal demand for heating equipment contains for wholesalers and producers continuing active distribution of cast iron commodities. Consumption of brass and malleable fittings has receded somewhat. Manufacturers of steel nipples in most all cases reduced their prices to jobbers during the past week. Wholesalers are keeping their stocks low and are placing orders only for rehabilitation of depleted items. Makers' quotations on fittings, nipples excepted, remain firm and unchanged. No delivery extensions from sources are encountered.

Enameled Ware

Enameled ware distribution is becoming more limited and the day-to-day consumption needs show a decrease as compared with early November of former years. Finishing processes on residential work and a fairly good amount of major projects sustain jobbers' sales in a fair way. Makers state that their volumes are comprised of few carload orders but of continuing good disposals from their local warehouses. Wholesalers are not heavily stocked and are purchasing mainly for definite needs. Quick shipments are being granted in all cases. Makers' prices remain firm and unchanged.

Pottery

New business placed with potters within the past several weeks showed some recession and was indicative of the generally lighter installation work which is experienced by master plumbers. A seasonal demand for colored and special ware obtains but movements of staple items, according to both wholesalers and potters, are not in accord with their expectations. Stocks at local jobbing centers are not heavy and no evidence of augmentation is noted. Potteries are sufficiently equipped to ship on short notice. Makers' prices continue unchanged.

Plumbers' Brass Goods

Consumption requirements for both cast and tubular items have been sporadic during the past several weeks. Some jobbers have reported a fair call for fixture trimmings, but movements of rough brass goods have not been extensive. The customary close range buying methods of wholesalers' purchasing agents necessitate frequent calls by manufacturers' representatives and orders received are for replacements only. The price situation from both makers' and distributors' standpoints continues unchanged. Deliveries from sources are being effected in satisfactory manner.

Range Boilers

Demand for galvanized range boilers is confined mostly to replacement or renovation work. Manufacturers state that their dispositions of hot water storage systems are quite seasonal but a little in arrears over what October and early November of last year showed. Wholesalers are in possession of sufficient working stocks but are not extending their purchases. Shipments from factories are being made in satisfactory time. Makers' prices are unchanged.

Boilers and Radiators

Heating contractors continue to be quite well occupied both in new installations and more so in replacement operations. Several manufacturing interests have reported satisfactory October volumes and fair balances of orders to be filled during this month. Both distributors and local warehouses of producers are maintaining sufficient inventories for existing requirements of the heating trade. Deliveries from sources are satisfactory. Makers' price sheets have undergone no change.

SOUTHEAST

Business Shows Moderate Improvement

WHILE sales in plumbing and heating lines for the closing days of October showed only a moderate improvement, it was apparent from reports that the market was reaching a firmer condition. Wholesalers, however, are not increasing their factory commitments to any extent, as they desire to keep their stocks pared until after inventory time and until business shows a more general quickening. Activity in the heating line continues a feature of the market.

The building inspector for the borough of Atlanta reports that construction permits during October totaled $1,040,200 which was an increase of more than $300,000 over September. October was the second largest month of the year, headed only by March with a total of $2,115,848. An increase of residential construction was also reported in October.

Well balanced stocks are being maintained by jobbers and materials are to be had promptly. No price changes were reported and factories are granting quick deliveries.

Soil Pipe

A light turnover in soil pipe was reported from the jobbing centers in this territory for the past fortnight, and business in this market remained at about the same level as announced in our previous review. Wholesalers are maintaining a small but good assortment of pipe and are able to furnish material promptly. The price remained steady at published levels. Factory shipments were made promptly.

Pipe—Brass, Steel and Wrought Iron

Jobbers are not stocking pipe heavily, but are keeping good working stocks on hand and are placing frequent orders with the makers for replacements. Sales were reported favorable, considering general conditions in the plumbing and heating trade at this time. Makers have not changed their published prices and deliveries are regular.

Fittings

Reports of jobbers indicate that fittings are moving at about the same ratio as was established last month. Little improvement was made in sales, it was said. Jobbers are adhering to the policy of small stocks and a quick turnover. Manufacturers are shipping promptly and prices were unchanged.

Enameled Ware

Most wholesalers report a rather satisfactory turnover in enameled ware products for the past two-week period. While business did not advance to any large extent, yet the market tone was firmer and some sections of the territory reported an improved condition in this market. Jobbers have small but sufficient stock on hand to care for the immediate needs of the trade. Prices were firm and shipments regular.

Pottery

No increased demand for pottery was reported from the jobbing centers in this territory, and business remained at the same level as announced in our last report. Stocks on hand are of sufficient volume to insure prompt deliveries. Master plumbers were only fairly well engaged for the period, it was said. Manufacturers have not changed their price lists and are shipping quickly.

Plumbers' Brass Goods

A fairly moderate turnover of brass goods was reported and no difficulty

was reported in receiving material promptly. Wholesalers are confining their orders to the immediate requirements of the trade. Makers are shipping promptly.

Range Boilers

Sales in range boilers declined to a small extent for the past two-week period, it was said. For the most part, demand for this commodity was confined largely to replacement and repair work. Jobbers are holding their stocks at a minimum level and are reluctant to place large factory commitments. No price change was announced by makers, and shipments are promptly executed.

Boilers and Radiators

A steady demand from the trade for boilers and radiators was had for the past fortnight. Reports indicate that sales have advanced since the opening of October, and most observers are of the opinion that with the advent of the cold season, sales in this line will show even more improvement. Prices have not been altered and factory shipments are promptly made.

PACIFIC COAST

Turnover Is Light

GENERAL business conditions along the Coast continue to be about the same as have prevailed during the past few months, with a nominal demand prevailing for materials. While jobbers' stocks are not heavy, they are of sufficient size to insure the trade's needs being taken care of with little if any delay. Distributors' prices to the trade vary in the different jobbing centers and continue to be more firm in some localities than they are in others.

Soil Pipe

Soil pipe is moving in moderate tonnage which seems to vary little from week to week. Most purchases continue in small lots for immediate requirements. Distributors are carrying stocks consistent with the trade's present needs and are re-ordering in about the same volume as sales. Distributors' prices vary in the different jobbing centers.

Pipe—Steel and Wrought Iron

Steel pipe is moving in a moderate tonnage which varies little from week to week, purchasing being done for current needs only. Distributors of steel pipe are carrying well assorted stocks and the trade's needs are being taken care of without delay. In some localities foreign pipe is still a factor. Distributors' prices on this commodity remain unchanged. Wrought iron pipe continues to move in about the same volume as it has maintained for several months past. Purchases of this commodity continue in small lots for immediate needs. Distributors are carrying stocks consistent with present demands and the trade's needs are being taken care of without delay. Prices are unchanged at mills.

Fittings

A sustained although not heavy demand continues for cast iron, malleable and drainage fittings, most purchasing being done in small lots for current needs only. Stocks in distributors' hands are of ample quantity and assortment to insure prompt deliveries. Distributors' prices are unchanged.

Enameled Ware

Enameled ware is not in heavy demand at present. The trade is pur-

THE STOCK MARKET

Range for Week Ending November 15, 1930†

Par Value	1930 High	1930 Low		*	Weekly High	Weekly Low	Weekly Close
NP	156⅜	94	Air Reduction Sales Co	A	102½	94	95½
NP	39¾	18½	American Rad. & Stand. San. Corp	A	20⅜	18½	18⅝
25	100⅞	32½	American Rolling Mills Co	A	35⅞	32½	33
50	81⅛	33	Anaconda Copper Mining Co	A	37	33½	34
NP	46½	25	Bastian-Blessing Co	C	26	25	25
NP	110¼	59⅜	Bethlehem Steel Co., com	A	71¾	59⅜	60½
100	134	120	Bethlehem Steel Co., pfd	A	122⅞	120	120
NP	30⅜	12⅛	Brunswick-Balke-Collender Co	A	13⅞	13⅛	13⅛
NP	112⅜	39⅛	A. M. Byers Co., com	A & E	43⅞	39⅛	40
100	114	108½	A. M. Byers Co., pfd	A & E	109⅛	109	109
100	127⅛	102½	Century Electric Co., com	F	103½	103½	103½
50	4¾	1	Chicago Nipple Mfg. Co., "A"	B	2¼	1	1
50	1½	1	Chicago Nipple Mfg. Co., "B"	B	1	1	1
25	45	40	Crane Co., com	C	40	40	40
100	119⅛	113	Crane Co., pfd	C	118	117	118
20	21	6⅝	Eagle-Picher Lead Co	H	6⅞	6¾	6⅞
NP	9⅜	1⅛	Fairbanks Co., pfd	A	1⅛	1⅛	1⅛
NP	50⅛	25	Fairbanks, Morse & Co., com	A	26½	25	25
100	111½	102	Fairbanks, Morse & Co., pfd	A	110	110	110
NP	20	10⅝	Greenfield Tap & Die Corp	B	11⅜	10⅜	10⅜
NP	29	19	Iron Fireman Mfg. Co	C	20⅛	20	20
NP	148⅜	62⅝	Johns-Manville Corp., com	A	70⅜	62⅝	63¼
100	123½	118¼	Johns-Manville Corp., pfd	A	121⅛	121⅛	121⅛
100	123½	118½	Jones & Laughlin, pfd	A & E	121¼	120	120¾
NP	78¼	41	Minneapolis-Honeywell Reg. Co., com	A	42	41	41
NP	73	36	Modine Mfg Co	B & C	40	36	36
NP	34	15⅛	Motor Wheel Corp	A	15⅞	15¼	15¼
NP	49½	35⅝	F. E. Myers & Bro. Co., com	G	36½	36⅛	36½
100	105	101¼	F. E. Myers & Bro. Co., pfd	G	104½	104½	104½
100	189½	116½	National Lead Co., com	A	120	118	118
100	144	138⅛	National Lead Co., pfd. "A"	A	142	142	142
100	119⅞	116	National Lead Co., pfd. "B"	A	118	118	118
NP	4½	1	National Radiator Corp., com	A	1	1	1
NP	11	2¾	National Radiator Corp., pfd	A	3	3	3
5	31⅜	14	Herman Nelson Corp	B	14¼	14	14
NP	76	65	Ohio Brass Co., "B"	B & G	65	65	65
NP	30	10	Revere Copper & Brass, Inc., com	A	12	12	12
NP	72	49¾	Revere Copper & Brass, Inc., pfd. "A"	A	49¾	49¾	49¾
NP	3	¾	Richmond Radiator Co., com	B	¾	¾	¾
NP	12	3½	Richmond Radiator Co., pfd	B	3½	3½	3½
NP	33	21	Ruud Mfg. Co	C	21	21	21
NP	37¾	19⅞	Spang, Chalfant & Co., com	A	28½	28	28
100	96	92	Spang, Chalfant & Co., pfd	A	93	93	93
NP	32	17	Time-O-Stat Controls Co., "A"	C	19⅛	19⅛	19⅛
NP	106⅜	55⅛	Union Carbide & Carbon Corp	A	61⅞	55⅛	55⅜
20	38¼	18½	U. S. Cast Iron P. & F. Co., com	A	26⅝	24⅜	24¾
NP	21	15⅜	U. S. Cast Iron P. & F. Co., 1st pfd	A	18⅝	18	18
NP	21¼	18½	U. S. Cast Iron P. & F. Co., 2nd pfd	A	21½	21⅛	21⅛
NP	55	23	U. S. Radiator Corp., com	B & D	27	23	23
100	100	100	U. S. Radiator Corp., pfd	D	100	100	100
NP	35	11	U. S. Rubber Co., com	A	15⅜	12⅛	12¼
100	63⅞	21½	U. S. Rubber Co., pfd	A	25⅞	21¾	22
100	198¾	139¾	U. S. Steel Corp., com	A	146⅜	139¾	140½
100	151¼	141	U. S. Steel Corp., pfd	A	147½	145½	145½
NP	9	2⅜	Universal Pipe & Radiator Co	A	3	2½	2½
NP	42⅜	16½	Walworth Co	A	17⅞	16½	16⅝
NP	19	7⅛	Wayne Co., com	B & C	7½	7⅛	7⅛
NP	35	27	Wayne Co., pfd	B & C	27	27	27
100	110	93	Wheeling Steel Corp., com	B	110	108	110
100	135½	131½	Wheeling Steel Corp., pfd. "A"	B	133	133	133
NP	29¾	16	Williams Oil-O-Matic Htg. Corp	C	16	16	16
NP	150¼	75	Youngstown Sheet & Tube Co	A	86	75	75

*Where listed—
A—New York Stock Exchange
B—New York Curb Exchange
C—Chicago Stock Exchange
D—Detroit Stock Exchange
E—Pittsburgh Stock Exchange
F—St. Louis Stock Exchange
G—Cleveland Stock Exchange
H—Cincinnati Stock Exchange

†If there is no trading during the current week, range represents last week recorded.

chasing only sufficient material to complete work on hand. Distributors have well balanced stocks and the trade's needs can be taken care of without delay. Coast factories are in a position to make early delivery of all classes of ware. Prices on this commodity vary in the different centers.

Pottery

A moderate amount of pottery is moving at present, with purchasing being done only for immediate requirements. Distributors are carrying stocks of sufficient quantity to insure prompt filling of orders as received, and can secure early delivery from various Coast factories. Prices remain unchanged at sources of production.

Plumbers' Brass Goods

A fairly well sustained demand continues for plumbers' brass goods. Distributors are carrying stocks in sufficient volume to insure prompt shipment of all the trade's needs and are re-ordering in about the same volume as sales. Distributors' prices are reflecting replacement costs and vary somewhat in the different jobbing centers.

Range Boilers

The demand for range boilers continues to be of a moderate nature. Distributors' stocks are of sufficient volume to insure prompt shipment of all orders. Prices by all concerned remain unchanged and the market is reported firm.

The Metal Market

	Nov. 11	Average Oct., 1930	Average Aug., 1930	Average 1929
PIG IRON—				
No. 2 foundry, Chicago	$17.50	$17.50	$17.50	$20.00
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb.	1.60c	1.60c	1.65c	1.93c
Blue annealed sheets, No. 13, Pittsburgh, per lb.	2.05c	2.15c	2.15c	2.17c
Black sheets, No. 24, Pittsburgh, per lb.	2.35c	2.40c	2.50c	2.85c
Galvanized sheets, No. 24, Pittsburgh per lb.	3.00c	3.00c	3.10c	3.57c
TIN—				
Straits tin (spot)	25½c			
LEAD—				
E. St. Louis	4.95c			

The Old Metal Market
Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	12 c	Copper, light	6¾c
Block, tin	22 c	Copper, uncrucibled wire	10 c
Brass, light	4¼c	Faucets and valves	7 c
Brass, heavy mixed	6½c	Lead, heavy	3¾c
Brass, red	8¼c	Solder Joints	6¾c
Copper, crucible	7¾c		

NOTE: Prices are those quoted on Tuesday of this week.

No Basis for Gloom, Central Trust Co. Says

IT IS hard to find justification for the current pessimism, the Central Trust Company of Illinois states in its monthly review of trade conditions. The bank points out that the country has more gold than it needs, more credit than can be utilized, more dividend and interest payments than ever before enjoyed and more crops than can be consumed, with average prices well below the level of average wages.

The only real foundation for any pessimistic feeling, the survey states, is a reduction of not more than 5 per cent in the total income of the people, or not more than 5 per cent in the cubic content of building construction and of not more than 3 per cent in the total disappearance of consumption goods.

"It is quite clear that the attempt to lay the burden of our business depression on the shoulders of our customer countries is a lame explanation of conditions," the bank states. "We must look further than foreign trade conditions and the foreign inability to buy for the reasons for our present situation. In our search for causes we discover that 1930 business conditions are a direct and natural result of over-production and over-buying in 1929.

"The most hopeful indication of immediate betterment in business conditions generally is found in the reduction of inventories. Home larders are not so well stocked, retailers' shelves are developing vacant spaces, available warehouse spaces show a reduction in wholesale stocks finished merchandise in factory warehouses is below last year's volume, and stocks of raw materials at consuming manufacturing plants are well below the level at this date of any postwar year. Taken together, these conditions indicate that consumption has been exceeding production for some time and, except for the small grains, the nonferrous metals and cotton, current stocks are not sufficient to supply current needs, even without the business pick-up through increasing demand which we have every reason to expect during the next few months."

Oil Burner Industry 11 Per Cent Ahead of Last Year

MANUFACTURERS of domestic oil burners not only have escaped the general business depression of the past twelve months but are enjoying the most prosperous year in the history of the industry, it was revealed at the quarterly meeting of the directors of the American Oil Burner Association in Atlantic City on October 15.

Sales for the current year were more than 11 per cent ahead of the same period last year, according to Harry F. Tapp, executive secretary of the association. Some companies reported an increase of more than 50 per cent and the directors were unanimous in their opinion that 1930 would exceed by a generous margin the record established last year when more than 125,000 oil burners were placed in American homes.

More than 600,00 household burners already are in use, it was revealed, and it was conservatively estimated that the total in use at the end of 1930 will exceed 655,000. In addition to the burners absorbed by the domestic market, a large number are being exported, it was disclosed. Complete export figures at the end of this year are expected to show a greater volume of overseas business than ever before in the history of the industry, according to information released by the oil burner association.

Pronounced Business Recession Is Ended, Says Guaranty Trust

ENCOURAGEMENT is to be derived from business developments in the last week, the Guaranty Trust Company points out in its monthly review of business and financial conditions. Although it cannot be said that definite recovery is evident, aside from the seasonal expansion usually witnessed at this time, the bank states the pronounced recession that characterized business activity in almost all lines throughout the late spring and summer has given way to irregularity, with positive improvement in some branches of trade and industry.

"The firmer tone," the survey states, "is reflected in the movement of the index of business activity of the Guaranty Trust Company, which stands at 72.2 per cent for September, as against 73.0 per cent for August, showing the smallest decline in several months. The incomplete reports covering this month's operations indicate that no severe setback has been experienced in recent weeks.

Stock Decline Over-rated

"While the trend of business activity thus affords some ground for optimism events in certain other directions appear, at first glance, considerably less favorable. The development that has undoubtedly attracted the major share of public attention since the beginning of October has been the further decline in stock prices, which has carried the general level approximately down to, if not below, that reached immediately after the collapse of last October and November.

"As usual, the recession in security values has reacted on business sentiment, creating in some quarters a degree of pessimism by no means warranted by its intrinsic importance. Commodity prices have also failed to maintain the firmer tendency that was noted a month ago.

Favorable Factors Apparent

"On the whole, however, the behavior of commodity prices in the last three months has presented an encouraging contrast to the consistent weakness that was evident during the first seven months of the year. Recent movements have covered a comparatively narrow range, suggesting that the readjustment, if not actually completed, is at any rate far along on its course.

"Among the most encouraging business reports that have appeared this month are the improvement in sales of new life insurance during September, the increase in raw cotton consumption, the rising level of residential construction contracts, the advance in foreign trade, and the large amount of current dividend payments as compared with the total a year ago, notwithstanding the numerous reductions and omissions of dividends recently reported."

In an earlier review by this same organization it was pointed out that industrial reports do not justify the exaggerated pessimism that has been visible in some quarters. The survey goes on to say:

"Such a view is as incompatible with past experience and present facts as is the attitude of those who have consistently refused to face the truth that the world is in the midst of genuine and severe business depression," The Survey continues. "Overdrawn and distorted views either give rise to unwarranted hopes and encourage false starts that can only end in further slumps, or dampen confidence and delay the return of prosperity.

"There is nothing abnormal or unprecedented about the present situation. It is a perfectly natural reaction, such as has been witnessed many times in the past and will continue to recur at intervals as long as our economic organization is what it is. The return of the next wave of prosperity is as inevitable and certain as was the termination of the last wave. Slowly but surely, the forces that will bring about revival are at work.

"Seasonal upturns in some branches of business activity have been noted during the last few weeks. In most case, these represent a somewhat belated start, since the beginning of the autumn revival is usually witnessed in August.

Outlook Better in Some Respects

"The trend of commodity prices, for example, in the last two months has been in marked contrast to the swift and steady drop that has been under way for about a year. Acute weakness has given way to comparative stability.

"The preliminary report on foreign trade last month is, under the circumstances, distinctly favorable. The export surplus was the largest for any August since 1921.

Richmond Home Modernization Bureau Being Organized

WITH the selection of a group of interested citizens to take immediate steps as a committee on organization, the city of Richmond, Virginia, on September 18th paved the way for the functioning at an early date of a Home Modernization Bureau. The desire on the part of the group of business leaders, both men and women, to go ahead with plans for the organization of the Bureau culminated at a general meeting held in the auditorium of the Richmond Chamber of Commerce under the sponsorship of the Richmond Inter-Club Council.

For many months secretaries of the Builders Exchange, Master Plumbers and Heating Association, and of associations of other branches of the construction field have been at work collecting statistics and information of the operation of Modernization Bureaus of other cities of Richmond's size—area of approximately 25 square miles and a metropolitan population of 200,000. With the pertinent facts at hand, an initial meeting was called of civic leaders through the medium of the Inter-Club Council (which is an organization composed of two representatives each from civic, social and commercial groups, including, for example, Kiwanians, Rotarians, Civitans, Lions, Advertising Club, Electrical League, Builders Exchange, Master Plumbers and Heating Association, Monarchs and others).

The facts presented were so stimulating, especially during this period of business depression, that the decision was made to proceed at once with the plan of organization. Representatives of Richmond's two dailies offered the liberal use of their news columns for all publicity that could be given to the proposition.

While the organization of the Home Modernization Bureau in Richmond is still in its tentative stages, the plan to be followed will be to make the undertaking an entire civic enterprise for beautifying the city, recreating block by block new and modern residences in sections close to the business center that are obsolete.

Briefly the plan of operation, to be worked out by the committee selected at the meeting of September 18th, will be to form a non-stock corporation whose directorate will be composed of aggressive leaders who will devote energy, time and effort toward a direct publicity campaign, personal contact with owners of real property to be remodeled, explaining the advantages that will accrue, and endeavoring to secure all owners in a particular block to consent to modernization.

Flat Rate Basis for Repair Charges

Would the plumbing and heating industry benefit from telling the public in advance what it will have to pay for repair work?

♦ ♦

Would the contractor doing jobbing work be better off if a flat rate basis was worked out for the industry?

♦ ♦

Would the public get over its feeling that it is being overcharged?

The above questions were submitted to contractors all over the country, and an unusual number of responses were received. The replies indicate differing opinions, of course; but that is no bar to a solution of one of the most troublesome problems of the industry and one that affects public opinion strongly. Every reader is invited to join in this nation-wide discussion

Here are some of the replies

"A Step in the Right Direction"

I believe that this is a step in the right direction. What we need is an established resale price on merchandise installed. Then we can be regular retailers and advertisers and go and sell, but the thing cannot be done any other way than as you suggest.

Duluth, Minn. Frank H. Farrell, Past President, Duluth Retail Plumbers, Past Secretary of Minnesota Retail Plumbers.

"Flat Rate Causes One to Laugh Out Loud"

As a reader of DOMESTIC ENGINEERING, from the pages of which I receive much helpful information, and being deeply interested in the economic welfare of a large body of well meaning but deluded members of a very necessary but much misunderstood craft, I would like to express my opinion concerning the establishment of a flat rate basis for repair charges in the plumbing industry. To my untutored mind, it is just another one of those things which causes one with some practical experience to laugh out loud.

When one asks, "Would the public get over its feeling that it is being overcharged?" one reflects that it is being demonstrated daily that the public will never get over its feeling that it is being overcharged, and this fact is proven beyond a doubt by the ever increasing demands for something for nothing. And this is especially true of the public's attitude toward the plumbing industry. The public is purchasing plumbing service today in a very large percentage of its transactions below cost of production, and when one recalls that all through the period of so-called prosperity or boom days there was apparently no thought of profit, but volume, one is tempted to give utterance to that expression of Vanderbilt's, given much publicity many years ago. It would be stretching the imagination to expect an intellect so low as not to get a profit in a boom, to demand a profit in a panic. No! dear fellows, what the plumbing industry needs is a better understanding of economic fundamentals, which would protest any such dream as a flat-rate basis for repair charges.

These are my conclusions after more than thirty years of practical experience in serving the public as a plumber.

With respect to the plumber as a class, I am convinced that Barnum was right (and I believe he was alluding especially to the plumber, because he quit

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Century Fountains have scored a national success. Health and School Authorities have enthusiastically approved them. Everywhere they are shown, architects instantly recognize their outstanding beauty. In formal black, or gleaming shades of color, Century Fountains enhance and lend a practical charm to the finest interiors. We invite you to investigate these fountains. Catalog "R" gives complete specifications and illustrates fully the entire Century line. Write for it today.

CENTURY BRASS WORKS, INC.

902 Illinois Street **Belleville, Illinois**

plumbing to embark in the show game, we are told).

I believe, however, that the plumbing industry in common with many another is suffering from an enthusiasm born of ignorance, not from the standpoint of science, but from that of economic necessity. Like many other lines, we are far ahead of our economic necessity, in consequence of which we are becoming economically destitute. In other words, we are encouraging the mass to indulge themselves in economically impossible desires. And the mass in the final analysis must be reckoned with, as witness the French Revolution, the more recent Russian readjustment, the uprising in India, and the events transpiring today the world over. And until human nature can be detoured from that selfish greed, which is encouraged and supported by that inexorable law of nature manifested in the survival of the fittest, we may expect little change. This thought again leads us away from thoughts economic into those of philosophy, and this in turn covers most of the sciences, the understanding of which is woefully lacking in a few of us poor deluded plumbers now trying to solve the problem of the cost of packing a bibb or prodding out a sink waste, and thus we leave the bewildered plumber with the prayer, "May God help him."

The plumbing industry is suffering from an enthusiasm born of ignorance

Denver, Colo. (Signed) T. G. Hendrie.

"Plumbers Not Born Ready for Work"

Without attempting to answer all the questions on the list, I will say that several months ago I had my man repair a sink faucet in the house of a well known physician here. When my man appeared on the scene he asked him what time he left the shop and requested that he report to him the minute he was through. My man obeyed instructions. The doctor asked him how long it would take him to get back to the shop. He told him, and incidentally asked what it was all about. Well, he was tired of this overcharging business.

I had an opportunity a short time afterward to make a few remarks at a service club where the doctor was a very prominent man. I told the story without mentioning any names; also mentioned the fact that a few weeks previous to that I called at the doctor's office, told him I wasn't feeling well. He told me to stick out my tongue, felt my pulse, told me to take it easy, that there was something in the prescription that would make me feel better. It took him four minutes and at the first of the next month I received a bill for $3.00, office call. I paid $1.25 for the prescription. The whole thing did not do me a bit of good, but I paid the bill.

It raised quite a laugh and after the meeting the doctor wanted to talk it over. I told him a few things and his only answer was that he was a professional man, it cost a lot of money to get his practice, go through college, etc. I said, "I suppose you think these plumbers and steam-fitters were born with a kit under their arms ready for work."

I had a fellow in the other day to buy a faucet. He

couldn't stand the gaff, he said. I know this man is getting $11,000 per year in his present position. I think anyone going out to make a flat price on repair work is inviting all kinds of complications. We have lots of people call us up to put in a new ball cock and they know so much about it and are so familiar with the terms used in our profession I know they have a plumber standing by waiting to check up on them. We won't give them a price on any jobbing work and on overhauling work. We only do it on a percentage basis.

To make a flat price on repair work is inviting all kinds of complications

We have been in business here for thirty years, have made money, during which time we have seen fifty or sixty so-called cheap plumbers come and go. I find the average good customers will pay the bill, if the work is done properly, without question and they know if it is not done right we will make it right without any cost to them. After forty-two years at the plumbing and heating game, I have come to the conclusion that our business is being injured more by cheap plumbers than by men who will stand up for a price and give the people what they are paying for.

When I started in business it took me two years paying cash before I could get credit from a supply house and the limit was $500 for thirty days. Today a man can go to many a plumbing supply house, tell them he is going in business, and they open their arms and tell him as far as credit is concerned the sky is the limit.

Have your representative come some time and go through our shop and you will find one of the old-time methods of running a plumbing and heating business. I am afraid it won't be long before we are requested to plant it down in the Museum of Natural History.

I did not intend to go to this length, but my answer to all of your questions is that what the plumber needs is to be educated. We can not stop "Puck" and "Judge" from criticising the plumber. That has been going on from time immemorial. I don't think you see as much as you did years ago, but with education and the men carrying our profession to a higher sphere, we will eliminate even this.

Ridgewood, N. J. (Signed) W. H. Moore.

"Flat Rates Would Start Competition Downward"

My answer to all three questions is NO.

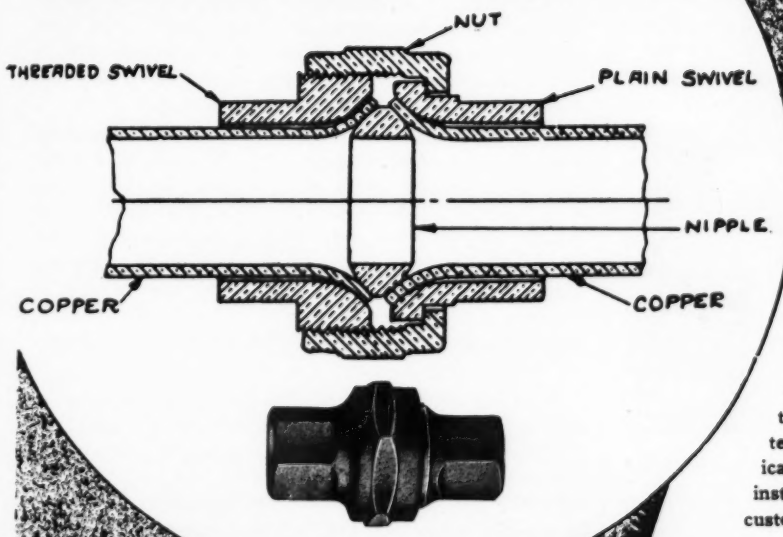
In making this answer it is not my intention to convey the idea that it might not work out satisfactorily in some other locations.

In our territory we have 24 non-union or open shops and 4 union shops, all doing a considerable jobbing business. The retail prices on labor run from $1.25 per hour to $2.00. We are in the $2.00 class and our jobbing business is good. In my opinion flat rates would only start competition in flat rates downward and bring about a very undesirable condition in the jobbing field.

I might add that I seldom take advantage of the flat rate propositions in the upkeep of our three cars.

Brookline, Mass. (Signed) Charles B. Tucker,
Tucker & Co.

ANDERSON



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Only THREE different types of Anderson Couplings are needed to complete an entire Copper Tube Plumbing Installation. With Copper Tube Plumbing on the inroad you must be prepared to meet the new competition with advanced equipment. Anderson Couplings have behind them a record second to none. Their utilization means not alone better work but also economical purchasing—low cost installation—and complete customer satisfaction.

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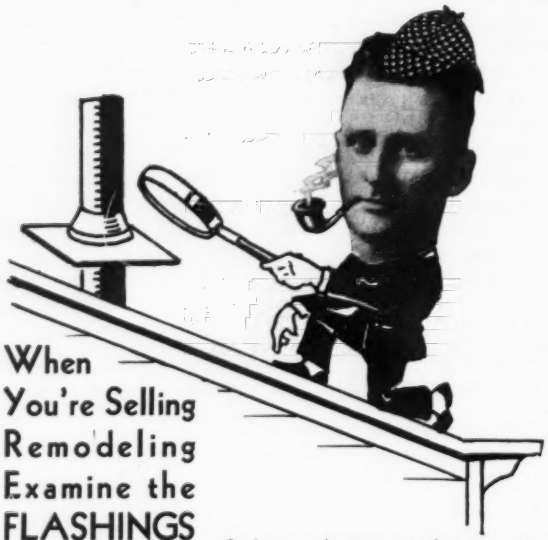

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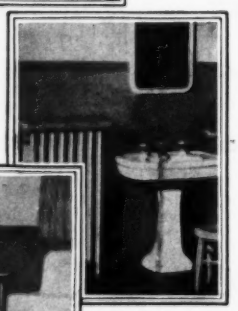

Here is a sound opportunity. Dealer Sales Franchises are limited. Write at once.

Armstrong Radiator Shields & Enclosures

"A Flat Rate Would Appear More Excessive"

(This letter was received from a wholesaler.—Editor.)

From my observation, the plumbing contractors' competition covering repair work comes from the large mail order houses who have retail stores in practically every locality today.

While I am not in accord with the policy of distribution of the large mail order houses, we must recognize the fact that their method of merchandising is becoming increasingly popular with the consumer on repair items.

I am of the opinion that if the master plumber would quote repair items at a reasonable price above his cost, elaborating on the quality of the merchandise he is offering, he could stop worrying about mail order house competition. I recently called at one of the retail stores of the largest mail order house, and inquired about the price of a range boiler. The clerk had as much sales talk on a range boiler as you would expect to hear if you were buying a Packard. He told me the weight of the steel; that it was galvanized inside as well as outside with a heavy coat of galvanizing; that the tappings were standard, and the replacement could be made very easily with a few wrenches which they sold in the same department in the event that the customer did not have the tools with which to make the replacement. True, the price they quoted would not reflect a large profit for the plumber, but a cartage charge of 85c, plus the cost of some fittings and nipples added, would make the sale profitable to the plumber, and divert the business back to the plumbing contractor, where it rightfully belongs. I inquired about their installation charge, and was told it would cost $1.75 per hour if they were to make the installation, which was followed by a little sales talk about the capable type of plumbers they had selected to make their installations.

Quote a reasonable price, elaborate on quality, and you can stop worrying about competition

It is apparent that the worst competitor on repair work that the master plumber has does not have a flat rate repair charge, but a merchandising method which is applied to plumbing fixtures, as well as to silks and calicos, and it has proven effective and profitable because the Plumbing and Heating Industries Bureau quotes a staggering sum, representing the volume of business done by this large mail order house in 1929; representing practically one-eighth of the entire plumbing and heating business done in the United States.

Now we know their merchandise is not superior to that regularly distributed by the plumbing contractor. Certainly their clerks are no more intelligent than the masters, and we know that, in most cases, they cannot offer the practical suggestions the plumbing contractor is capable of making, but in many cases is hesitant to make. Therefore if the plumber were to put a flat rate basis in effect (covering material and labor) on repair work, I believe the price, compared with mail order house prices, would *appear* more excessive than it does now.

Milwaukee, Wis. (Signed) Roy Cordes,
Cordes Supply Company.

Questions?

ASKED BY READERS AND ANSWERED BY EXPERTS

About Heat Losses Through Certain Walls and Ceilings

Editor, DOMESTIC ENGINEERING:—I would like to know if you can tell me the B.t.u. loss per degree through a wall constructed of 2x4 studding with lath and plaster inside and ⅞-in. sheathing outside beyond which is a 4-in. brick veneer separated from the sheathing by a ¾-in. air space; tar paper is tacked on the outside of the sheathing.

Also could you tell me the B.t.u. loss through a ceiling of lath and plaster carried on wooden joists with a roof construction consisting of wooden rafter, ⅞-in. roof boards (not very well matched) and composition shingles? What difference would an attic floor of ⅞-in. wood make in the heat loss from the rooms below?

Memphis, Tenn. V. F. H.

In Fig. 1 is illustrated a section of the wall concerning which the correspondent is inquiring. This wall is somewhat unusual in the feature of carrying a ¾-in. air space between the brick and the sheathing whereas in the ordinary brick veneer wall the brick is usually backed up by mortar and attached to the sheathing by numerous wall ties, the mortar acting as a separator between the brick and the sheathing.

The ordinary construction of such a veneer wall is illustrated in Fig. 2 and the only difference between the

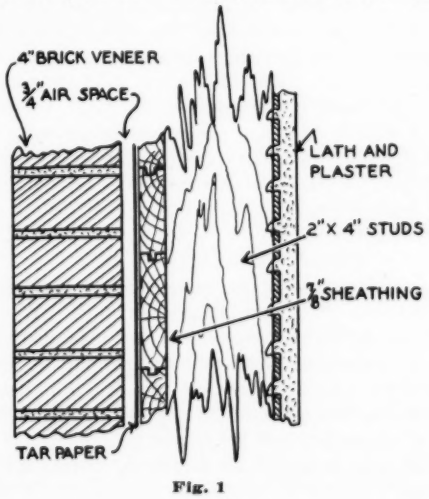

Fig. 1

wall submitted by the correspondent and the ordinary wall is that the first case has a ¾-in. air space between the brick and the sheathing for which the second case substitutes a ½ in. of cement mortar. Otherwise the arrangement is identical.

We do not believe that it is a practical possibility to put a 4-in. brick veneer on a frame constructed wall and to maintain a ¾-in. clear air space between the brick and the sheathing. This is because the tamping down of each brick onto its mortar bed causes the mortar to

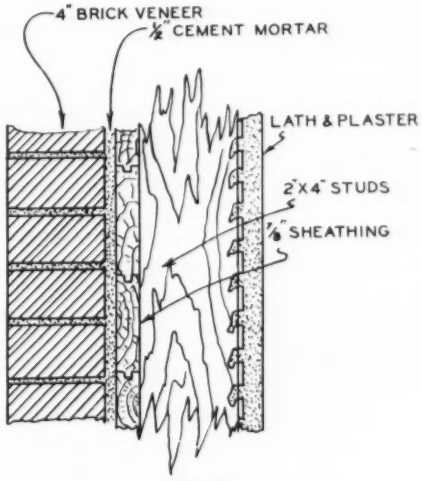

Fig. 2

squeeze out and to project beyond the line of the brick. On the outside the joints are struck and this surplus mortar removed. On the inside (with only a ¾-in. width to work in) striking the joint would either be impossible or, if struck, the mortar removed would fall to the bottom of the air space filling, or partially filling, it.

In laying up any brickwork a certain amount of mortar dropping is inevitable. The obstructing of the bottom of a chimney by mortar droppings, pieces of brick, etc., is a good example of an aggravated case of this kind. For this reason we do not believe that the air space should be considered, as its existence not only is problematical but also is extremely doubtful whatever the original design may have contemplated.

The worst case that could develop with the correspondent's wall would be to have the air space fill up solid with mortar and, if this occurs, the construction becomes that shown in Fig. 2 except that the mortar would be ¾ in. thick instead of ½ in. The coefficient for heat loss (that is, the number of B.t.u. passing through the wall per sq. ft., per hour, for every degree difference between inside and outside temperature) is 0.247 for such a wall with ½-in. mortar or 0.241 for a similar wall using ¾-in. thick mortar. The substitution of a ¾-in. air space in place of the ¾-in. mortar would reduce the coefficient to 0.204 but, as previously explained, we do not feel that

this lowest value should be used owing to the danger that the wall as actually built will not have an unobstructed air space and we, therefore, recommend the use of the coefficient 0.241 for such work.

Concerning the second part of our correspondent's inquiry, there are two ways to consider an unheated attic between warm rooms and the outside air, the simplest of these two methods being to assume an attic temperature about half way between the room temperature and the outside temperature, as shown in Fig. 3. Now the min-

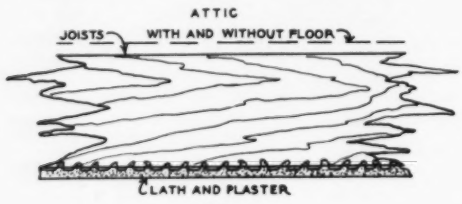

Fig. 3

imum temperature for Memphis—strange as it may seem—is 9 deg. Fahr. below zero whereas New York City has never gone below minus 6 deg. Fahr.

It would naturally be assumed from this that buildings in Memphis would have their heating designed on a minimum outside temperature of zero, and with 70 deg. difference between the room and the lowest outside temperature the average temperature for the attic would be $\frac{70+0}{2}=35$ deg. Fahr. But the ceiling of a room is usually considerably warmer than the point near the floor where the temperature of 70 deg. Fahr. is maintained so that the temperature at the ceiling probably would be nearer 75 deg. Fahr. than it would be 70 deg.

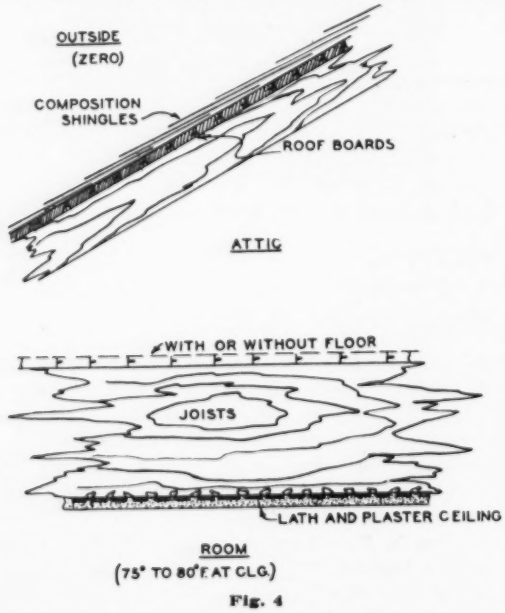

Fig. 4

Fahr. Taking this into consideration would make the average temperature for the attic $\frac{75+0}{2}=37\frac{1}{2}$ deg. Fahr.

The coefficient (heat in B.t.u. transmitted through 1 sq. ft. of construction per degree temperature difference per hour) for a lath and plaster ceiling without flooring above is 0.502 and this, multiplied by the temperature difference of 37½ deg. Fahr., gives a factor of 18.82 as the number of B.t.u. transmitted per sq. ft. per hour with zero outside. The addition of a ⅞-in. flooring on top of the joints would reduce the coefficient to 0.272 making the factor

$0.272 \times 37\frac{1}{2} = 10.19$ B.t.u. with zero outside.

If it is desired to use the other method (see Fig. 4) the transmission coefficient for the ceiling and roof are combined into a single factor based on the roof area, and the total temperature difference must be used. The coefficient for a lath and plaster ceiling, an unheated attic, and a roof of asphalt shingles on wood sheathing, is 0.272 and, with an attic floor inserted, reduces to 0.175.

These two coefficients with 70 deg. Fahr. temperature difference between the room and the outside will give factors (B.t.u. per sq. ft. for 70 deg. temperature difference, per hour) as follows:

0.272×70 deg. $= 19.04$ B.t.u. for unfloored attic.

0.175×70 deg. $= 12.25$ B.t.u. for floored attic.

This would seem to indicate that the previous method gives results somewhat lower than they should be unless the temperature at the ceiling is assumed as 10 deg. above the room temperature at the breathing line in which case the attic temperature would be

$$\frac{80+0}{2}=40 \text{ deg. Fahr.}$$

and 80 deg. — 40 deg. = 40 deg. temperature difference. Then multiplying 0.502 by 40 gives a factor of 21.80 for unfloored attics and 0.272 multiplied by 40 gives a factor of 10.88 B.t.u. for floored attics.

◆

The Heating Value of Fuel Oil and Coal

Editor, DOMESTIC ENGINEERING:—We are very much interested in and enthused about oil burners for heating purposes and we have been informed by a manufacturer of an oil burner that 125 gallons of fuel oil at 8c per gallon—in heating elements—is equal to 1 ton of hard coal at $10.00 per ton. Now what we would like to know is how much soft coal—in heating elements—at $6.00 per ton is equal to the same 125 gallons of oil at 8c per gallon.

West Virginia. C. L. H.

We think that what the manufacturer may have meant was that the B.t.u. purchased with 125 gals. of oil at $0.08 per gallon was equivalent to those purchased with a ton of anthracite coal at $10.00 per ton in cost as well as in B.t.u. In order to test this out it is necessary to assume that the oil is 19-23 deg. oil having a B.t.u. content of about 148,000 B.t.u. per gallon.

With this grade of oil the B.t.u. purchased with 125 gals. is

$$148{,}000 \text{ B.t.u.} \times 125 = 18{,}500{,}000 \text{ B.t.u.}$$

and the cost would be

$$125 \times \$0.08 = \$10.00$$

Now this B.t.u. value distributed over a ton of coal would amount to 18,500,000 B.t.u. ÷ 2000 = 9250 B.t.u. per lb. of coal, which is entirely too low for any kind of

coal except lignite. Anthracite coal usually contains between 11,000 and 14,000 B.t.u. per lb., according to quality, the general run averaging, perhaps, about 13,000 or 13,500 B.t.u.

With bituminous coal of good quality the B.t.u. content per lb. ranges from 13,000 to 15,000 B.t.u. per pound, or an average of about 14,000 B.t.u.

It is quite likely therefore that the oil burner manufacturer was not talking so much about heat actually purchased as he was about heat delivered into the steam or hot water in the boiler, in which case the boiler efficiency enters into the matter. On ordinary house heating boilers the average efficiency with coal does not go much over 60 per cent and is much more likely to be 50 per cent or even lower if banked fires, and similar losses are taken into account.

With an oil burner the burner operates only when heat is necessary and usually at, or close to, its highest efficiency point, so that an average of 70 per cent may not be out of the way. Under these conditions the 125 gals. of oil which contain 18,500,000 B.t.u. when burned under the boiler may be assumed as delivering into the water or steam

$$18{,}500{,}000 \times 70 \text{ per cent} = 12{,}950{,}000 \text{ B.t.u.}$$

and a ton of ordinary anthracite coal containing, say, 13,000 B.t.u. per lb. under the same conditions may be assumed as delivering

$$2000 \times 13000 \text{ B.t.u.} \times 50 \text{ per cent} = 13{,}000{,}000 \text{ B.t.u.},$$

which is very close to the amount delivered by burning 125 gals. of oil.

Now in regard to bituminous coal; if average coal of 14,000 B.t.u. is considered the B.t.u. delivered by burning one ton under a boiler would be

$$14000 \text{ B.t.u.} \times 2000 \times 50 \text{ per cent} = 14{,}000{,}000 \text{ B.t.u.}$$

and every gallon of oil similarly burned will deliver

$$148{,}000 \text{ B.t.u.} \times 70 \text{ per cent} = 103{,}600 \text{ B.t.u.}$$

so the number of gallons of oil which would have to be burned under a boiler to deliver into the steam or waste the same 14,000,000 B.t.u. received by burning a ton of soft coal will be

$$14{,}000{,}000 \div 103{,}600 = 135 + \text{ gals.}$$

Now if this comparison were made with a poor grade of soft coal the quantity of oil would not be as much, while if the comparison were made with the best grade of soft coal the quantity would be more. Similarly if an oil of lower degree were considered the quantity of oil could be reduced, while if oil of a higher degree is considered the quantity must be increased.

Like all rule of thumb amounts, the quantity of oil to equal a ton of coal is a variable and the ratio of 125 gals. to a ton of hard coal and 135 gals. to a ton of soft coal is probably a fair ratio for average conditions. After the ratio is once established it is easy to multiply the oil by the cost per gallon and to compare the cost with the price of a ton of coal in that particular locality. A clear distinction must be kept in mind, however, between "heat purchased" and "heat delivered," as it is very seldom that the same total heat can be purchased in oil at the same price as in coal.

Greater efficiency in utilization, elimination of coal and ash handling and greater cleanliness, however, in most cases bring the cost of oil (based on heat delivered) within comparable limits with that of coal and in some instances it may show an actual economy.

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Water in the rock springs of nature gushes clean and sparkling from its source because it is carried through nature's own rock pipe line.

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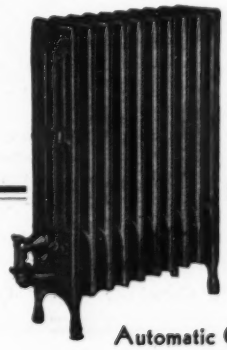

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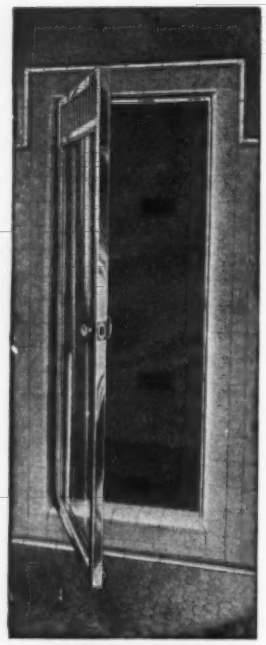

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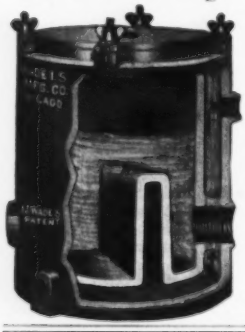

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More About Sweating Pipes

Editor, Domestic Engineering:—In reading your issue of October 1, I noticed a question and answer about the sweating of water pipes.

The writer from his experience as a plumber has found that the sweating of pipes and tanks is generally caused by leaking faucets and tank valves.

The constant flow of cold water through the pipes and tanks in a warm room or basement will cause a condensation on the outside surface of pipes, which has the appearance of a leak. All faucets should be kept tight in cold weather.

Philadelphia, Pa. Wm. U. Griffiths.

Questions Answered and Discussed by Readers

How the Question Was Answered

The following question was asked in the issue of October 18, and the accompanying answers are by readers:

Why is it that, although steam flows with a greater velocity than water in the ordinary heating system, a larger pipe is required for the steam than for the condensate?

How Would You Answer This Question?

There are two tenants on each floor of a 2-story steam-heated building. Each tenant has a gas-heated 30-gallon range boiler in the kitchen. How would you install an indirect water heater at the steam boiler to furnish hot water for all of the tenants during winter, leaving the present gas heaters for summer service?

Answers based upon your experience, and suitable, will be paid for and published in the December 13 issue.

1

THE answer to this is that because a pound of steam has so much greater volume than a pound of water (steam roughly having 1,700 times as much volume as an equal weight of water) a larger pipe is required for the steam—even at its higher velocity—than is necessary to carry the condensation.

It also follows that the lower the pressure of the steam the larger the steam pipe must be, if all other conditions are to be kept equal. Thus a larger amount of steam can be carried in the same pipe and with the same pressure drop, if the steam is at 5 lb. gauge pressure than if it is at 1 lb. gauge and, similarly, a larger amount can be carried at 1 lb. gauge than at 15 in. of vacuum.

This is because at 5 lb. gauge the volume only is 20 cu. ft. per lb. but at 2 lb. gauge it jumps to 23 cu. ft. per lb. and at 15 in. of vacuum it is increased to about 50 cu. ft. per lb. For this reason steel power boilers of a given

horse power and providing steam at high pressure operate quite satisfactorily with one steam outlet but the same boiler when converted into a heating boiler and operated at low pressure requires *two* steam outlets instead of the single one previously used even though the number of pounds of steam produced per hour remains identical.

Louisville, Ky. J. L. Green.

2

THERE are several reasons why a larger pipe is required to carry a given weight of steam than is required to carry the same weight of condensate in the same time.

The first, and perhaps most pronounced, reason is that steam at ordinary heating system pressures occupies about 1,500 times more space than an equal weight of water. It is true that the steam in a heating system flows at a higher velocity than its condensate but the difference in velocity is not so great that the steam main can be made the same size as the return.

For example the velocity of flow in an ordinary wet return main is less than 1 ft. per second, and the velocity of the steam in an ordinary low pressure heating main is usually less than 40 ft. per second although sometimes more. Consider a specific case. The maximum steam velocity we assume to be 50 ft. per second and that is quite high: it represents a pressure drop of about 3 ounces in 100 ft. run of the main the pipe size being 2-in. It can supply about 650 sq. ft. of ordinary cast iron direct radiation. With a 6 in. per second velocity in the return main which is considered quite high enough for gravity, we find that all the condensate can be carried by a ½-in. pipe. In practice we would not dare use such a small return main because of the likelihood of chokage by rust, sand, etc., gathering in the line. We would use a return main not smaller than 1 inch, which would give a maximum velocity about 2 in. per second in the return main.

Another reason for having the steam main much larger than its return main is to reduce the pressure drop enough to ensure a reasonably equal distribution of steam to all radiators, and a free and easy drainage of condensate into the return main without having the condensation back up in the system high enough to interfere with the flow of the steam. This point is very important in gravity return work. On a job which has a vacuum pump or steam return trap it is not so important.

Still another reason, one which has more or less bearing on the subject, is that the system should operate silently: there should be no sound of hissing steam and that requires low pressure steam and low velocity flow.

In gravity return steam heating systems, such as are commonly installed in small residences, the lowest points of the steam mains are frequently about 24 inches or so above the level of the boiler water line. The total pressure drop in the steam main plus the friction of the condensate flow in the return line must be low enough to prevent condensate from backing up high enough to get into the steam lines. This requires comparatively large steam lines the sizes usually being determined in accordance with the available or most desirable pressure drop.

New York. T. T. Newman.

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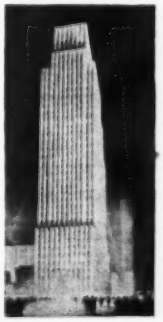

In the
N. Y. NEWS B'ld'g

Raymond Hood, John Mead Howell, Architects
(Gen Bldg Contrs —Hegeman Harris Co., N Y)
(Fountains as Illustrated)

No. 608

No. 631
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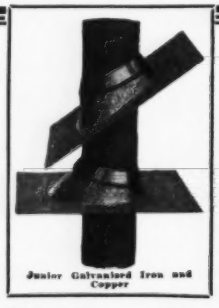
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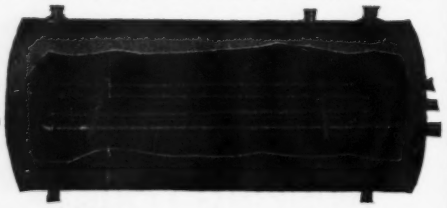
ARROW Black or Galvanized
TRADE MARK
THE NOVELTY STEAM BOILER WORKS COMPANY
Clare and Kloman Streets Baltimore, Maryland

Modernization of "My Old Kentucky Home" Hotel Brings Business

(Continued from Page 42)

tried to make it look as well as it operated. The radiators and piping were painted like the walls, a soft green in the lobby and shades of brown in the dining room, so that they blended in with the walls and are scarcely noticeable. Bright nickel floor and ceiling plates, which were not used at all before, were installed. The finishing touches have not been put on in the basement, but boiler ironwork and covering will be painted, too. As the work stands even now, though, it is hard to recognize the all-but-finished installation as the old rusty, down-at-the-heel heating apparatus that we started to work on.

An opening was held recently and all the countryside was there. Wraps were quickly discarded, for we are making it warm in this "Old Kentucky Home" hotel this winter for visitors and home folks, too. Travelers are going to want to tarry a while in the cheery warmth of radiator heating, home folks are going to drop in for dinner, and even the son of "Old Black Joe," who, with his banjo, lends the atmosphere of old slave days to the country thereabout, may shufflle around to the hotel kitchen to toast his toes by a radiator.

Frozen Water Pipes Can Be Thawed Quickly with Electric Current

(Continued from Page 53)

triple braid weatherproof copper wire were used as leads from the transformer to points of contact. An ammeter and current transformer were used to measure the current flowing.

There are numerous other transformer connections which might be used. If additional methods are desired, more complete information may be found in Bulletin No. 7 of the Purdue University Extension Service.

Precautions should be taken to minimize any fire hazards caused by leakage or stray currents. This may be done by disconnecting the frozen portion of pipe. This disconnection is often required in some cities. Another possible source of danger is where

Table IV—Charges for Thawing

	City	Cost per Job
1.	New Rochelle, N. Y.	$15.00
2.	Madison, Wis.	10.00
3.	Niagara Falls, Ont.	10.00
4.	Patterson, N. J.	8.20
5.	Green Bay, Wis.	7.70
6.	Trenton, N. J.	7.50
7.	St. Louis, Mo.	6.58
8.	Minneapolis, Minn.	5.00
9.	Rutland, Vt.	4.11*
10.	Lawrence, Kansas	3.25
11.	Gary, Indiana	3.00
12.		2.54
13.	Petersboro, Ont.	2.50
14.	Kitchener, Ont.	2.00
15.	New York City, N. Y.	.....**

*Average from 866 services.
**Charge is $1.00 per 100 feet, minimum $10.00.

pipes go through walls of inflammable material. These places may be watched while the process is going on.

Tables II, III and IV are summaries of thawing jobs.

New Oil Standards Aid Contractor

(Continued from Page 74)

used for domestic oil burners, are composed of fractions of different volatility is shown clearly in Fig. 1. The various components of the oils are distilled or boiled off at temperatures ranging from about 300 deg. Fahr. to above 600 deg. Fahr. Water as we all know has a constant boiling point of 212 deg. Fahr., at atmospheric conditions, whereas oils have, we might say, an indefinite number of boiling points between certain temperatures which are required to still off the first and last bits. This characteristic of an oil is important. It indicates that an oil may be satisfactory at one portion of its boiling range and entirely unsatisfactory at another.

Appreciating the fact that gravity is of no value as an indicator of the volatility, viscosity or general desirability of an oil fuel, a joint conference of representative refiners, distributors, and consumers of fuel oil, manufacturers of oil burners, and general interests, on January 9, 1929, adopted a commercial standard for domestic and industrial fuel oils. Effective from July 15, 1929, the industry has accepted and approved for promulgation by the Department of Commerce, the specifications which were presented in DOMESTIC ENGINEERING. It is urged that all members of the oil heating fraternity familiarize themselves with these standards, because they represent a most intelligent step in the direction of better understanding between the fuel oil producer and the oil burner designer, and consumer of oil fuels. Copies of these standards known as Domestic and Industrial Fuel Oils, Commercial Standard CS12-29, can be procured from the Superintendent of Documents, Washington, D. C., at a price of 5 cents in coin.

It is interesting to check the characteristics of the oils given in Table 2 and Fig. 1 against the requirements of the No. 1 oil in the new specifications, since these oils were supplied for that type of burner which now requires a No. 1 according to the more recent standards. The oils "D," "E," "F" and "G" all comply with the requirements as to flash point and water and sediment. However, oil "F," as regards volatility, is somewhat below standard at the 10 per cent and end points. If such standards as we now have them had been developed at that time no doubt the fuels would have been more consistent. It is important to note that gravity is not mentioned at all in the commercial standards for oil fuels which are now in use.

The application of these more rational standards should certainly serve to obviate much contention which has in the past manifested itself in connection with oil burners. There has been entirely too much shifting of responsibility between the oil burner agent and the dealer in oil fuels. The writer has witnessed many disagreements which certainly could have been obviated, or at least settled quickly, had there been some rational basis for classifying and testing the oils. In the early days when the vaporizing burner, sometimes referred

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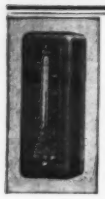

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to as the gravity burner, was produced in large numbers, the failure or partial success of such equipment was tied up with the volatility of the fuel used. Yet, volatility was never mentioned. Either a kerosene or approximately a 40-deg. Baume distillate was supplied, and when more carbon than usual was produced the trouble persisted until we found a better oil, although we did not know just what was better about it.

The particular oil supplied for a given product depended principally upon the Underwriters Laboratories' recommendation. They merely specified the range of gravity of the fuel which was permissible with a given burner and many times the burner did not function at its best, although it was being supplied with oil of the correct gravity according to the Underwriters' recommendations. The reason for this is clear when a study is made of oils which are of the same gravity and, according to the belief in the past, presumably of similar flash point and volatility characteristics. The variations in general characteristics of oils which are of the same gravity is wide indeed.

The gravity of an oil can be of some real significance in certain connections when used intelligently and particularly when we are dealing with products of the same original crude. For example, the refiner may make very intelligent use of the gravity determination in his everyday operations, but this application is far removed from the use as a sole means of specifying an oil fuel for a full-automatic burner installation.

It is the duty of all of us who are associated in any way, directly or indirectly, with the oil burner or fuel oil industry to further the use of the new and more rational terms.

Pitch and Size for Hot Water Systems

(Continued from Page 40)

second floor radiators fed by a common supply and return riser, all as illustrated in Fig. 4.

The schedule for radiator runouts will be the same as already determined for Fig. 2 because the radiators are at the same relative heights above the boiler. This gives the following:

Radiator Sq. Ft.	Elevation Ft.	Size of Runout In. Dia.
71	5	1¼
40	15	¾
50	15	¾
10	15	½
80	5	1¼
15	25	½

These sizes have been used in Fig. 4.

Beginning back at the 71 sq. ft. radiator this branch is shown above to require 1¼ in. size but because this is the radiator farthest from the boiler the size will be made 1½ in. This 1½ in. will carry back in both the supply and return lines until another branch comes into the pipe which—in the supply—occurs in the attic main where the pipe supplying the two 50 and 40 sq. ft. radiators on the second floor is taken off. So next this pipe will be sized. The two radiators have a total surface of 50 + 40 or 90 sq. ft. and are set 15 ft. above the boiler so—according to Table III—the size or riser must be 1¼ in. and the return also will be 1¼ in.

Proceeding to the third riser supplying 15, 10 and 80

sq. ft. it is found that the pipe connecting to the 80 sq. ft. radiator already has been determined as being 1¼ in. After taking in the branch for the 10 sq. ft. on the second floor it is found that the total load on the riser at the second floor is

$$80 + 10 = 90 \text{ sq. ft.}$$

which at 15 ft. elevation above the boiler requires (Table III) a 1¼ in. pipe. Then going up to the attic the total load on the riser is found to be

$$80 + 10 + 15 = 105 \text{ sq. ft.}$$

and at this elevation (25 ft.) the size of pipe (Table III) will still be 1¼ in. To determine the size of the combined return from the 15 and 10 sq. ft. radiators it is seen that at the 1st floor level the total load is

$$10 + 15 = 25 \text{ sq. ft.}$$

and at 5 ft. elevation above the boiler the size of pipe required (Table III) is ¾ in.

It is now a simple matter to size the supply main by combining the three branches supplies and the factors for same, from Table IV, thus:

Size of Branch	Factor	Size of Main	Factor
1¼ in.	20	1¼ in.	20
1¼ in.	20		
Main	40	2 in.	60
1¼ in.	20		
Main	60	2 in.	60

The return main would be sized in the same manner as indicated below.

Size of Branch	Factor	Size of Main	Factor
1¼ in.	20		
1¼ in.	20		
Main	40	2 in.	60
1¼ in.	20		
Main	60	2 in.	60
¾ in.	5		
Main	65	*2½ in.	110

(*2 in. is used here to agree with supply as this extra factor of 5 for the ¾ in. return from the 10 and 15 sq. ft. radiators is plainly introduced by separating these returns from the 1¼ in. return from the 80 sq. ft. radiator.)

For those who prefer to read the pipe sizes direct without the use of calculations or tables the graph, shown in Fig. 5, has been prepared. In this chart the elevations of the radiation above the boiler in feet have been plotted on the left hand margin and the number of square feet of radiation across the bottom. The chart is divided into areas for the various sizes of pipe and to get the size of pipe for any amount of radiation it is only necessary to find the intersection between the line of radiation and the line of elevation. The area in which this intersection falls is marked with the correct size of pipe.

Thus for 100 sq. ft. of radiation set 55 feet above the boiler the 100 line is found on the scale at the bottom and the 55 line on the scale at the left. The intersection of these two lines falls in an area marked 1 in. pipe while 300 sq. ft. of radiation by following up the 300 line to the same elevation where the intersection falls in the area of 2 in. pipe which is the correct size.

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Woman's Page

Women's auxiliaries can often help in interesting pupils and teachers of public schools in maintaining good sanitary conditions in their school buildings. The school board in one city follows the practice of awarding a silver cup at the end of the year to the school in which all plumbing equipment, including drinking fountains, is in the best condition. In other cities, contests are being carried on by women's clubs and parent-teacher organizations, and prizes are awarded to schools which win the highest rating for cleanliness.

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Dates for National Auxiliary Convention Announced

The annual convention of the Women's Auxiliary to the National Association of Master Plumbers will be held on Tuesday, June 23, and Thursday, June 25, at the Schroeder Hotel, Milwaukee, Wis. Dates for the convention were chosen at a recent meeting of the board of directors of the national association.

Florida Auxiliary Hears Reports from Locals

The Florida Master Plumbers and Woman's Auxiliary held a meeting in West Palm Beach on October 25. The men's meeting was held in the Chamber of Commerce, while the ladies held theirs in the El Verano Hotel. Each section was represented and Mrs. V. C. Grant, state president, presided. National President, Mrs. W. E. McAndrew, gave a talk on the convention and stressed the importance of the Opportunity Committee and appealed to the members for assistance. Mrs. J. Pitt Simpson, who was not present, sent her regrets.

The following women made reports on their auxiliaries: Mrs. Henry Griggs, Bradenton; Mrs. L. Gegan, Miami; Mrs. C. B. Perkins, Lakeland; Mrs. Phillips, Winter Haven; Mrs. W. E. McAndrew, Tampa; Miss Sidney Fromberg, Daytona; and Mrs. F. R. Fanning, Orlando. Mrs. Krumpie told of her efforts to organize an auxiliary in West Palm Beach. Mrs. C. Ewing of Miami graciously offered her apartments to any auxiliary members to use while attending a meeting which was to be held later in Miami.

Members of Opportunity Committee Announced

Mrs. W. E. McAndrew, president of the Women's Auxiliary to the National Association of Master Plumbers, has announced the membership of the Opportunity Committee as follows:

Mr. E. L. Flentje, Chairman, Chicago.
Mrs. Howard Bryant, Bridgeport, Conn.
Mrs. E. O. Pratt, Salem, Oregon.
Mrs. W. F. Black, Enid, Okla.
Mrs. Jas. Murphy, Racine, Wis.
Mrs. Geo. Roser, Louisville, Ky.
Mrs. W. A. Fritsch, Pittsburgh, Pa.
Mrs. Foster Fanning, Winter Park, Fla.
Mrs. Floyd Sharp, Jamestown, N. Y.
Mrs. C. R. Dickey, Kansas City, Mo.

Missouri Division Gives Card Party

The Ways and Means Committee of the Missouri Division of the Women's Auxiliary sponsored a card party in St. Louis, October 21, at Nugent's auditorium. Forty tables were filled, and the affair was much enjoyed by all. The committee in charge consisted of Mrs. A. Meyer, chairman; Mrs. D. Reardon, Mrs. J. Els, Mrs. L. A. Miller, assisted by Mrs. E. E. Manahan, state president.

Hutchinson Auxiliary Holds Meeting

The Women's Auxiliary to the Master Plumbers' Association of Hutchinson, Kans., held a meeting recently at the home of Mrs. A. P. Riggs, 319 West Sixth street. The following ladies were guests: Mrs. Amel Gauch, Mrs. Guy Holt and Mrs. Wiley Kitsmiller. After business had been transacted, a social hour was enjoyed, and the hostess served refreshments to members and guests.

Midwest Auxiliary Holds October Meeting

The regular monthly meeting of the Women's Auxiliary to the Midwest Sanitary Club of Chicago was held Tuesday, October 14, at the home of Mrs. William Arnold, 1440 Eleventh avenue, Maywood, Ill. The meeting was called to order by the president, Mrs. Kveton. Many suggestions for future affairs were discussed, and members are looking forward to some pleasant times during the coming season. After the business meeting, a delightful luncheon was served by the hostess, Mrs. Arnold. Cards were played, with high scores going to Mrs. Kveton, Mrs. Arnold, Mrs. Lynam and Mrs. Petersen.

Columbus Auxiliary Plans Social Affairs

The Women's Auxiliary to the Master Plumbers' Association of Columbus, Ohio, met on October 8 at the home of its president, Mrs. J. R. Jacobs, 323 Whittier street. Last year the auxiliary voted to hold its business meetings every third month, and a social affair each of the two intervening months. After business had been transacted, refreshments were served by the hostess. Many plans were discussed at the meeting. Among these was the covered dish dinner, on Armistice Day, at the home of Mrs. J. F. Oelgoetz, 279 East N. Broadway, at 6 P. M., with auxiliary members entertaining their husbands at cards and games after dinner. The December meeting will be a Christmas party, the place to be announced later.

On Saturday, October 25, the members of the Women's Auxiliary and the master plumbers' association were guests at the summer home of Mr. and Mrs. J. R. Jacobs

at Buckeye Lake, Ohio, where they were served a sauerkraut dinner. The evening was spent playing indoor games. The party was a decided success.

Kansas City, Mo., Auxiliary Active in Charitable Work

The October meeting of the Women's Auxiliary to the Master Plumbers' Association of Kansas City, Mo., was held at the home of Mrs. Eva Enggas, second vice president and treasurer of the organization. Luncheon was served at noon, after which the ladies were favored by a very interesting talk by Mrs. Jack Cunningham, vice president of the Kansas City branch of the Needlework Guild of America, who ably described the aims and accomplishments of the society. There was a fine attendance, and the members are very enthusiastic over plans for the future. Mrs. Herbert Pardee accepted the chairmanship of the entertainment committee, and much success is wished her, in her efforts to provide funds for carrying on the auxiliary's work. The Kansas City auxiliary takes an active part in charitable or philanthropic endeavors in the city.

The president, Mrs. Ira Henderson, gave a fine report of the national convention, on the occasion of the auxiliary's first fall meeting, which was held at the home of Mrs. Grover Beanland. Louis Karges, son of Mr. and Mrs. John Karges, attended the meeting, to present his thanks for his National Auxiliary scholarship.

A Message to the Auxiliaries

The following letter has been received from Mrs. J. F. Murphy, of New Bedford, Mass., president of the Massachusetts State Auxiliary:

"There were so many delightful occasions for the members of the Women's Auxiliary during the National convention in June, consisting of luncheons, entertainments, sightseeing bus trips, dances and special social and business affairs, crowded into a short space of time, that it has not seemed expedient for the state association to inaugurate anything in the amusement line since that time. As a result, there has not been very much of special interest for the members since then.

"Now that the summer and its attendant vacation season is over, and the enjoyable occasions of the conventions are but pleasant memories, it is our intention to start something in the way of winter season activities in the near future.

"I have had the pleasure of attending several outings of the different master plumbers' associations through the summer, and have met with a most optimistic feeling in most cases.

"This feeling seemed so encouraging that we are going ahead with plans with some sort of gatherings, either card parties or dances, as in past years, and we are hopeful of putting over some very enjoyable affairs such as our predecessors have had."

Chicago Steamfitters' Auxiliary Resumes Meetings

The Women's Auxiliary to the Chicago Master Steamfitters' Association held its first meeting of the fall on Monday, October 20. The meeting was held at the usual place, the Palmer House, and a delightful luncheon was served. Mrs. E. Hansen was the hostess for the day. After a brief business meeting, bridge was played. Plans

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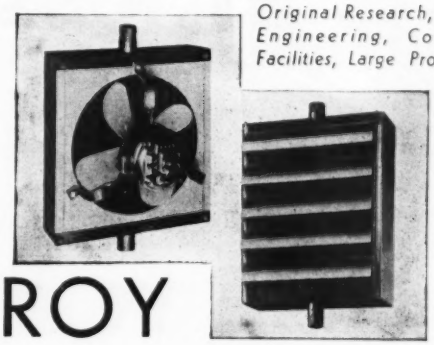

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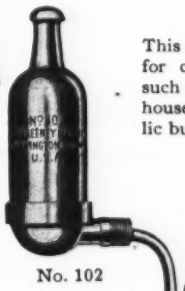

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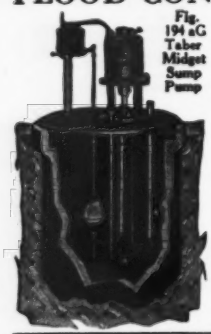

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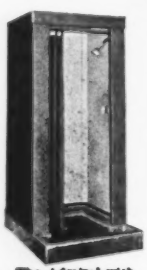

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were discussed for a splash party or a theater party in the near future, but nothing was decided definitely. The secretary, Mrs. R. Tropf, resigned from office because of ill health. Women of the auxiliary were sorry to lose the services of this faithful member as secretary. The president, Mrs. F. Lamb, appointed Mrs. Schroeder to fill the vacancy. A membership committee has been appointed, and the auxiliary hopes to secure some new members.

Jackson Auxiliary to Join Needlework Guild

The first fall meeting of the Women's Auxiliary of Jackson, Mich., was held Thursday, October 16, at Judson's barbecue. Luncheon was served before the business meeting. There was a good attendance, and much interest was displayed. It was decided to join the Needle Work Guild, in accordance with the suggestion of Mrs. Mesnard, president of the Michigan State Auxiliary. Each member is to furnish two new garments for babies. It is felt that this work will add greatly to the interest in auxiliary work.

Ogden, Utah, Auxiliary Gives Box Lunch

On Tuesday, October 14, members of the Ogden Association of Sanitary and Heating Engineers were pleasantly surprised after their meeting by the giving of a box lunch by the auxiliary. A good sum was realized for the auxiliary's treasury, and everyone enjoyed the affair.

South Side Auxiliary Meets at Fairfax Hotel

On October 1, the South Side Woman's Auxiliary of Chicago held its first meeting of the season at the Fairfax Hotel. The thirty members present displayed much gaiety and enthusiasm. Mesdames A. Jones, R. Moe, F. P. Myers, and L. Strauss acted as hostesses for the day. Following a very delicious luncheon, the regular business session was held, at which time Mrs. Wm. Ritter, a past president of the auxiliary, expressed hearty thanks for the box of candy given her by the members of the auxiliary along with their best wishes for her trip abroad.

Each member of the South Side Auxiliary had been requested to earn $2.00 during the summer months for the treasury. Mrs. Harris called upon each one to tell just how and where she earned her $2.00. And with much amusement and laughter, such excuses as car washing, nursing, laundering, poker, rescuing drowning persons, etc., were heard. The members decided to give a donation of $25.00 to the Cathedral Charities of Chicago.

Mrs. Quinlan received a rising vote of thanks for so generously opening her summer home to the auxiliary members at their picnic in June.

The remainder of the pleasant afternoon was spent with the usual enjoyable card games, bridge honors going to Mesdames J. Quinlan, D. Fyanes, and C. Taffe, and honors for five hundred going to Mrs. F. Myers.

Halloween Party Given by Kalamazoo Auxiliary

The Women's Auxiliary of Kalamazoo, Mich., had a most enjoyable masquerade and Hallowe'en party at the home of Mrs. Herman F. Wilk, 503 Terrace Place. The house was very effectively decorated, in keeping with the season. All rooms were darkened, with the exception of a few lighted pumpkins and lights with orange and black shades. Guests were received by a ghost, and as each one arrived a large number was pinned on her, and she was given a list on which to write the identity of each of the masqueraders, as she guessed it. The guests were very effectively attired, and the costumes caused much laughter. Mrs. Leo Muryne, secretary of the auxiliary, received the prize for guessing the greatest number. Bunco was the diversion of the evening after the guests unmasked.

For this game, Mrs. L. A. Schoolmaster received first prize. The ladies are selling Christmas card boxes and small kitchen utensils for the benefit of the treasury, and at this party they were distributed to members.

After the games, a dainty two-course luncheon was served. The table was beautifully decorated in orange and black. The center piece in the dining room consisted of a bowl in which incense was burning, with a large figure of a witch beside the bowl. From this bowl, each one pulled out her fortune. Guests were loud in their praises of Mrs. Wilk for her delightful party.

Bridge Party Given by North Hudson Auxiliary

The Women's Auxiliary of the Master Plumbers' Association of North Hudson, N. J., held a bridge party recently in its rooms, 501 Palisade avenue, West New York, N. J., which was attended by nearly fifty members and guests. Refreshments were served after the game by the committee, which included Mrs. Daniel Thurnau, Mrs. Charles Werner and Mrs. E. Wittriech. The entertainment committee headed by Mrs. A. C. Krieger, with the assistance of Mrs. William Borg, Mrs. E. Seitz, Mrs. Edward Muth, Mrs. Charles Steller and Mrs. Vincent Farrelly, arranged for the affair.

Los Angeles Auxiliary Holds Luncheon and Dinner Meetings

At the October meeting of the Los Angeles Women's Auxiliary, a new member, Mrs. Henry Barnes of Hollywood, was admitted to the organization. Luncheon was served before the business meeting. An interesting event during October was the picnic at the home of Mr. and Mrs. E. R. Wright in Sunset Canyon. There was a large attendance, and Mr. and Mrs. Wright were presented with several gifts by the members of the auxiliary. On October 21 the regular monthly dinner was held. Cards

Top picture: Mrs. William Bloeth, treasurer of Nassau County auxiliary; Mrs. William Metcalf, secretary of state auxiliary; Mrs. Charles Fritz, president, and Mrs. William Kleb, vice president, both of Nassau County auxiliary. In back: Mrs. J. C. Metcalf, trustee. Bottom picture, front row: Mrs. J. Reidman, Mrs. T. Grandinetti, Mrs. E. Knoblauch and Mrs. M. Martinis. In back: Mrs. Edward Durr, president of New York state auxiliary; Mrs. A. W. Kline, Mrs. A. F. Lynch and Mrs. L. Dohms. Photos taken at the outing of the Nassau County Master Plumbers' Association

Clean Dollars from Dirty Dishes

Every woman hates the drudgery of washing dishes. A Walker frees her from it. It washes, rinses and dries the finest china, glassware, silverware . . . even pots and pans. It cleans itself, too; never needs touching. Only one moving part; nothing to get out of order. Exclusive advantages are making the new Walker a sensation in every part of the country.

OTHER live plumbers, men just like yourself, are selling the amazing, new Walker Electric Dishwasher in place of ordinary sinks—a $200 or $300 sale instead of $30 or $40 sale. It's easily done if you try. They are making extra dollars, building good-will and creating a profitable *new* market in old homes, too — through the word of mouth advertising of their enthusiastic women customers.

We will help you get started. Many sales to old homes are speeded up by an easy-to-take budget plan.

Walker advertising in these powerful magazines is helping to build YOUR sales.

WALKER

ELECTRIC DISHWASHERS

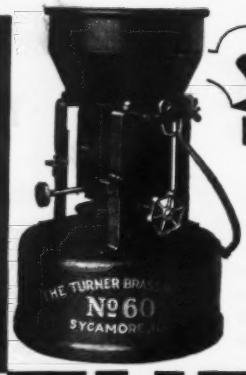
Mail the coupon for catalog, prices, discounts and full information.

WALKER DISHWASHER CORPORATION, DE-11
1024 South Waller Ave., Chicago, Ill.

We are interested in making profits on Walker Electric Dishwashers. Send catalog, prices and full information.

Name .....

Address .....



new
NUMBER 60

Not just another model, but a new Turner furnace, incorporating many new and exclusive features that will make you want to own one right away. You can get this handy furnace very reasonably.

TURNER

WITH *Flame Control*—permitting adjustment of flame from full heat to a simmering point. Melted metal may be held at constant temperature without danger of burning.

WITH *Self-Cleaning Orifice*—entirely automatic—with every full revolution of the control valve handle a needle point thrusts through the orifice, cleaning it of any deposited matter.

WITH *Tilting Top Section*—the top section tilts; when tilted, coil, jet-block, shut-off valve and drip cup are all accessible for cleaning.

WITH many other features—such as the Patented Overflow Drip Cup and the 10-pint capacity tank of heavy gauge one-piece steel.

Don't fail to send for full information and prices.

THE TURNER BRASS WORKS

821 PARK AVE., SYCAMORE, ILL.

WESTERN BRANCH: 1284 Sunset Blvd., Los Angeles, Calif.

FLOOR AND CEILING PLATES
B&C
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The old favorites the newest models
No. 10 One Dozen 1 In. Pattern
Nickel Plated
FLOOR & CEILING PLATES
The Beaton & Corbin Mfg. Co.
Southington, Conn. U.S.A.
Look for this box with "B&C" Trade Mark
THE BEATON & CORBIN MFG. CO.
SOUTHINGTON, CONNECTICUT

followed the dinner, honors going to Mrs. Knorr, Mrs. Kopp, Messrs. Fielden and Hogan. The next evening dinner will be served on November 19.

North Shore Auxiliary Entertained at Country Club

The Women's Auxiliary to the North Shore Plumbing Contractors' Association was entertained on its regular meeting day, October 16, by Mrs. J. M. Krejci at the Shawnee Country Club in Wilmette, Ill. Sixteen members were present, and all did justice to a most delicious luncheon, served in the attractive dining room, amid fall decorations. After a most enjoyable luncheon, cards were played, Mrs. Flader and Mrs. McKenna winning honors.

Portland, Ore., Auxiliary Gives Luncheons

The Women's Auxiliary to the Portland, Ore., Association of Master Plumbers recently gave a luncheon at the home of Mrs. George O. Kendall, 631 East Sixty-sixth Street North. Another luncheon meeting was held during October at the home of Mrs. Edward P. Murphy, 412 Tillamook Street. A card party was also held at the home of the president, Mrs. George W. Kendall, 431 Rodney Avenue.

Canton Auxiliary Increases Membership

The Women's Auxiliary to the Canton, Ohio, Master Plumbers' Association met on Tuesday afternoon, October 7, at the home of Mrs. Harry Zimmer, 617 Bedford avenue, S.W. Mrs. U. I. Bott acted as assisting hostess. Five hundred was played after the business meeting, and honors were won by Mrs. Herman Grabowsky and Mrs. A. W. Baum. At this meeting, the auxiliary welcomed two new members, Mrs. C. Carpenter and Mrs. John Blum. Mrs. G. Schwitzgable and Mrs. A. W. Baum will entertain the ladies for the November meeting.

Boston Auxiliary Resumes Meetings

The first autumn meeting of the Women's Auxiliary of the Master Plumbers' Association of Boston and Vicinity was held on Wednesday evening, October 29, at the home of Mrs. James G. Gillespie in West Roxbury. The business meeting was well attended, and future plans were discussed. Following the meeting, Halloween games were indulged in by the members and their husbands, and much merriment was occasioned. Decorations were in Halloween colors. Refreshments were served after the games.

Top row: Mrs. Richard T. Thatcher, Fairhaven; Mrs. Harry Mulberry, New Bedford; Mrs. Evelyn Robbins, Fairhaven. Bottom row: Mrs. Philip LaFrance, Mrs. John J. Downey, Boston; Mrs. Mary E. Cleary, Brighton. Photos taken at the convention of the Massachusetts Master Plumbers' Association

And Now—Some Facts About Modernization

(Continued from Page 55)

sale of a modernization job by accompanying our salesmen during a home owner visit, *each one of these* 1,300 *contractors has since sold at least five modernization jobs!*

Of prime importance is the fact that each of these 1,300 contractors has been qualified to sell through our time payment plan and has been in a position, therefore, to offer this service, although the great majority of the jobs which they have installed have been for cash.

This remarkable spread of modernization activity through the use of the time payment plan and personal contact has caused to stand out from the ranks of contractors those few thousand men who are of the aggressive, merchandising type, keenly alive to our changing times, and alert to the opportunity to take advantage of the progressive developments of manufacturers, and of their selling and dealer aids; and these are without doubt the contractors who will be considered among those present when, as, and if the present unsettled condition shall have resolved itself into a humdrum day by day consumer selling job in which only those shall survive who have proved to be fit.

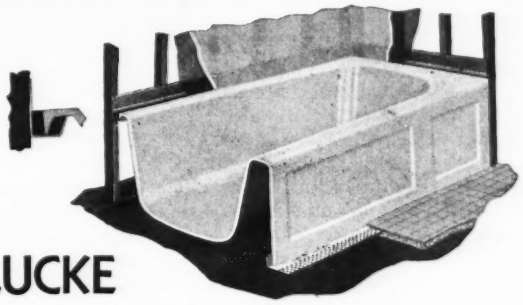
It is patent that the successful heating contractor of today can no longer ignore the old home market and the modern means for its modernization. He can no longer bemoan the passing of the days when he stood dominant in a community of people who depended upon him and his convenience to cater to their needs. He can no longer rail at the fates that guide his destiny, but instead, like a good soldier in the changing days of battle, he must accept the modern type of weapon and ammunition and go forward and onward to defeat the enemy.

But there is room and great room, with the brightest of prospects for the dealer who has the intelligence and the courage to meet modern conditions with modern selling. These are the men our industry needs today . . . these are the men our industry will have tomorrow because they are the ones who will survive.

◆

Western New York Chapter, A. S. H. V. E., Hears Dr. Aston

The Western New York Chapter, of the American Society of Heating and Ventilating Engineers, meeting at Hotel Buffalo, Buffalo, N. Y., on November 10, heard an address on "The Aston Process of Wrought Iron Manufacture," by the inventor himself, Dr. James Aston. Much credit was given to President F. H. Burke for securing this speaker for the Chapter, when so many other societies throughout the country have been unsuccessful in their endeavors to have Dr. Aston as speaker. Dr. Aston is the director of mining and metallurgy of the Carnegie Institute of Technology, and consulting metallurgist for the A. M. Byers Co. In February of this year, he was awarded the Robert W. Hunt medal in New York for his paper on "The New Development in Wrought Iron Manufacture." His address to the chapter, on the subject of this new development, included the showing of motion pictures.



LUCKE

Leak Proof Tub Hanger

The Lucke Leak Proof tub hanger was designed to serve two purposes of great importance in the installation of a bathtub or shower receptor.

First, it acts as a positive seal between any wall and the edges of a built-in tub or receptor.

Second, it prevents tub from settling with building and pulling away from plaster or tile.

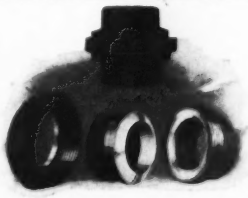
Reasonable in Price. Easily installed and guaranteed for the life of the building. Made of Heavy Gauge galvanized steel. Write today for full information.

WILLIAM B. LUCKE

Manufacturer

WILMETTE ILLINOIS

THE LUCKE LEAK PROOF TUB HANGER



TAKE ONE APART

If you inspect a Dart Union it will convince you of its quality.

TWO BRONZE SEATS, perfectly matched, perfectly machined and easily made tight, stand double guard against leaks and corrosion. Sturdy nut and shoulders give the needed strength. TAKE A DART APART! See for yourself its quality.

Ask your jobber

E. M. DART MFG. COMPANY
Providence, Rhode Island

Sales Agents: THE FAIRBANKS COMPANY
New York Branches

Canadian Factory: DART UNION CO., Ltd.
Toronto, Canada

DART UNIONS

New Trade Literature

A Combination Refrigerator and Sink

J. F. Weinheimer, of Buffalo, N. Y., has just issued a circular describing a newly patented combination electric refrigerator and sink. The circular points out the advantages resulting from the combination of these two units, from the point of view of saving space, steps and time for the housewife. A novel feature is the automatic device for opening the refrigerator doors by pressure of the foot against pedals located in a recess at the front of the unit. The combination refrigerator and sink is illustrated with doors both open and closed.

"Typical Installations of Indirect Water Heaters"

Bell & Gossett Co., Chicago, have issued a booklet with the title "Typical Installations of Indirect Water Heaters for Steam or Vapor Heating Boilers." Installations on low water line boiler, on oil-fired steel boiler, and for heating churches, garages, etc., are shown in diagrams. Indirect oil pre-heaters are also described.

Top row: K. Friedberg, A. B. Amsel, A. Lipsky and S. Tannenbaum, all of Brooklyn. Middle row: Mr. and Mrs. John D. Cooley, New York City; W. A. Tarrant, Worthington Pump Co., Harrison, N. J.; William Sweeney, Joseph Spellman. Bottom row: Alex. J. Brown, executive secretary, Manhattan association; Patrick F. Gleason, past president of Brooklyn association; Joseph B. Brady, Brooklyn. Photos taken at the outing of the Greater New York master plumbers at Welfare Camp

Circular of McDonnell & Miller

McDonnell & Miller, of Chicago, are sending out a circular with the caption, "Where to use it, how to use it, what type to use." The folder describes the concern's self-cleaning duplex feeder and single valve feeder. A safety feeder for boilers is also described.

"The Challenge to Waste"

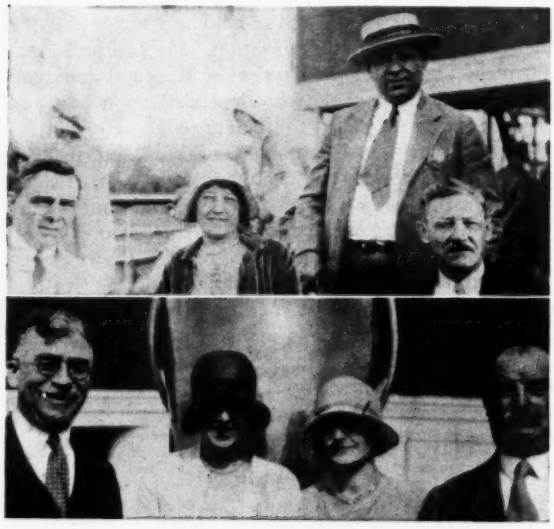
Lee B. Mettler Co., Los Angeles, Calif., has issued a pamphlet with the title, "The Challenge to Waste," describing its entrained combustion gas and oil burner. The combustion gas burners, combination oil or gas, are applied to pulverized fuel or oil furnaces to make it possible to burn gas, oil or pulverized fuel. A partial list of users is given, as well as illustrations of parts of the burner. Another booklet just published by this company gives installation specifications and blue prints, as well as technical descriptions. Two folders with the captions, "Answering Your Questions," and "The Temperature You Want When You Want It," are also being distributed by the company.

Broadside of American Radiator Co.

A broadside announcing a new boiler was recently mailed to the trade by American Radiator Co., New York City. A mailing tube representing a miniature red jacketed boiler was used to enclose a black, white and red window display poster which sets forth the new product. In addition to a picture of the boiler, a cross sectional view is shown and all of its many features are numerically described. Stickers and directions for posting in windows were also included.

Booklet of The Perfect Tank & Seat Co., Inc.

The Perfect Tank & Seat Co., Inc., Syracuse, N. Y., has just issued a catalog describing its closet seats. The seats are illustrated in pearl orchid, pearl green, old rose, blue and white. Seats in mahogany and oak finishes are also illustrated. Low down and high tanks are included, as well as hinges.



Top row: Louis Bosch, vice president of Brooklyn association; Mrs. Louis Bosch; William Wolff, vice president of New York state association; Samuel Tannenbaum, Brooklyn. Bottom row: William Chesnut, past president of New Jersey state association; Miss E. Cullen, Miss E. Durr, Joseph Durr, past president of New Jersey state association, all of Montclair, N. J. Photos taken on board ship en route to the convention of the National Association of Master Plumbers, held at Boston

Catalog of Knott Mfg. Co.

Knott Mfg. Co., Tell City, Ind., has issued its Catalog No. 6, illustrating water closet seats of its manufacture. A number of different styles of seats, as well as several types of hinges, are illustrated. The construction of the seats is described.

New Business Ventures

Brooklyn, N. Y.—The Wilko Plumbing and Heating Corporation has been organized and incorporated, with a capital of $10,000, by A. M. Wilko and associates, to establish and operate a plumbing and heating engineering and contracting business. The new concern is represented by S. B. Newman, 170 Broadway, New York City.

Los Angeles, Calif.—C. F. Ballinger and Fred Thing have formed a partnership to engage in the plumbing and steam heating business at 4225 West Tenth street, under the name of the C. F. Ballinger Co. Mr. Ballinger has been in business in Los Angeles for many years.

Los Angeles, Calif.—The Southside Plumbing Co. has engaged in business at 11214 South Main street, under the management of Paul R. Wells.

Corydon, Ind.—D. L. Weber of Louisville, has opened a plumbing and heating establishment in the shop formerly owned by the late Charles C. Gailey on West Chestnut street.

Brooklyn, N. Y.—With a capital of $10,000, the DeKalb Plumbing and Heating Company has been organized and incorporated, to establish and operate a plumbing and heating engineering and contracting business. The new concern is represented by J. M. Lovell, 16 Court Street.

Buffalo, N. Y.—The Niagara Heating Company has been established here at 226 Maryland Street, under the management of A. Sciolina.

Detroit, Mich.—Michigan Plumbing and Heating Company, 5736 Chene street, has been incorporated to conduct a plumbing and heating business.

Manhattan, Kans.—Manhattan Plumbing Co. has opened an establishment at 108 North Third street. The firm is owned by Mont Green and N. C. Lenman.

Chicago, Ill.—J. A. Ryan, Inc., 5034 Pensacola avenue, has been incorporated with a capital of $10,000, to conduct a plumbing and heating business. The incorporators are: Conrad Hedstrom, Joseph A. Ryan and Wallace Anderson. Frisch & Frisch represent the new firm.

Bear Lake, Mich.—O. E. Barker has just engaged in the plumbing, heating and hardware business. He was formerly engaged in the hardware business in Beulah, Mich.

Los Angeles, Calif.—The Dependable Electric & Plumbing Service has been established at 41177 West Tenth street, under the ownership of Charles L. Long and William Zappey.

Sioux City, Iowa—The Budden Company, 100 Westcott street, has been incorporated with a capital of $10,000, to conduct a plumbing business. Z. F. Budden is president, and E. M. Herber is secretary and treasurer.

Stanley, Wis.—A new plumbing establishment has been opened by C. A. Long. Mr. Long was recently located at Bloomer, Wis.

Green Bay, Wis.—N. Skogg & Sons, Inc., plumbing and heating contractors, have filed articles of incorporation, listing a capital of $25,000. The incorporators are Earl H. and Julia and Gilbert E. Skogg.

New York City—The McEvily Plumbing and Heating Company has been organized and incorporated, with a capital of $10,000, to establish and operate a plumbing and heating engineering and contracting business in the Bronx. The new concern is represented by N. W. Welling, 36 West Forty-fourth Street.

Klamath Falls, Ore.—C. D. Clarke and William A. Walters have engaged in business under name of Modern Plumbing & Construction Co.

Bayonne, N. J.—The firm of Cozceewith and Golush, Inc., has been chartered, with a capital of $25,000, to establish

CHALLENGE BRAND
PIPE NIPPLES
Wrought Iron, Steel, Brass, Copper

Any kind of nipple you need is included in the Challenge Line. And they're all of the finest quality. Perfectly threaded, cut to correct lengths dipped in rust-resisting drying oil and packaged in cartons for your convenience.

Send for Sample Nipple
FRICK-REID SUPPLY CORPORATION
Nipple Division
Sandusky and Robinson Sts. N. S. Pittsburgh, Pa.

DUR-A-BAL
REG. U. S. PAT. OFF.

Alkaline waters have no effect upon the sturdy **DUR-A-BAL.** No condition of service is too severe for the **DUR-A-BAL'S** pure gum rubber construction. Do away with swelling, elongating and distorting tank balls. Put in the **DUR-A-BAL.** From your jobber.

LAVELLE RUBBER CO.
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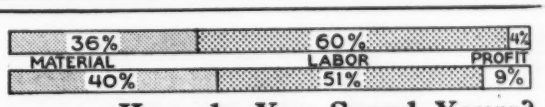

How do You Spend Yours?

TWO contractors were handed $100 each to install valves on two identical jobs. Any remaining surplus would be theirs.

One decided to save money on materials. So he spent $36 for valves which cost him $60 to install. This left him a profit of $4.

The other decided that good materials would cost less to install so he spent $40 for O-B valves and they cost only $51 to install. This left him a profit of $9. How do you spend yours?

Ohio Brass valves are so designed and machined as to give "an extra profit in the make-up".

Ohio Brass Co.
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JENKINS

TESTED BRASS FITTINGS

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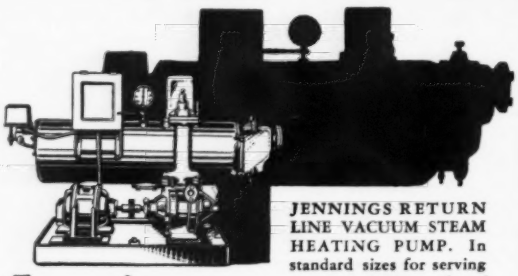
Bloomfield, N. J.



JENNINGS RETURN LINE VACUUM STEAM HEATING PUMP. In standard sizes for serving up to 300,000 sq. ft. of radiation. Write for Bulletin 85. The Nash Engineering Company, 41 Wilson Rd., So. Norwalk, Conn.

Jennings Pumps

$75 to $295

Henry Swade, Plumber of Chicago, says:

"I have an EverHot Heater installed in my own home. From the first day of its operation it has given me excellent service. Too much praise cannot be given to it."

EverHot Heater Co.

Detroit, Michigan

Branches and Sales Offices in 64 Cities in United States and Canada

No. 1522

It's easy to understand how brass goods such as this sells easily. Housewives appreciate the new beauty of American Chrome faucets and will want them when you explain how easily cleaned they are and how they hold their brilliant lustre always.

From your jobber.

AMERICAN SANITARY MFG. CO.

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YOUR FITTING PROBLEM IS SOLVED *when you say* "SQUARE GEE'S"

SQUARE Pipe

"GEE" Fittings

MALLEABLE, CAST IRON DRAINAGE, BRASS

THE GRABLER MANUFACTURING CO.

New York - - - - - - - - Chicago - CLEVELAND, OHIO *San Francisco Los Angeles*

Left to right: N. M. Schwarb, president of F. Grey Libbey Co., Hartford; William T. Roemer, building inspector, Boston; Phil. Mason, superintendent of buildings, Hartford; Croll Flint of H. B. Smith Co., president, Massachusetts Heating Trades Golf Association

and operate a plumbing business. The new concern is represented by the local law firm of Seclow and Nessanbaum.

New York City—The Five Boroughs Plumbing and Heating Corporation has been organized and incorporated, with a capital of $20,000, to establish and operate a plumbing and heating business, with headquarters in the Bronx. Morris Seider, 305 Broadway, represents the new firm.

Brooklyn, N. Y.—J. Lipstein and associates have organized and incorporated the firm of J. Lipstein, Inc., with a capital of $20,000, to establish and operate a plumbing engineering and contracting business. The new concern is represented by L. J. Lipstein, 132 Nassau Street, New York City.

Brooklyn, N. Y.—With a capital of $5,000, the Craft Heating Corporation has been organized and incorporated, to establish and operate a plumbing and heating engineering and contracting business. B. Levitt, 215 Montague Street, represents the new company.

Rochester, N. Y.—With a capital of $10,000, the Gold Seal Plumbing and Heating Company has been organized and incorporated, to establish and operate a plumbing and heating engineering and contracting business. The new concern is represented by the local law firm of Whitman and Dey.

New York City—The Phillips Home Utilities Corporation has been chartered, with a capital of $10,000, to establish and operate a heating engineering and contracting business. A. W. Clurman, 551 Fifth Avenue, represents the new concern.

Business Changes

San Francisco, Calif.—J. A. Demers has moved his plumbing and heating business from 3279 to 3265 Mission street.

Sacramento, Calif.—The Latourrette-Fical Co., since 1876 engaged in the plumbing, heating, ventilating, electrical and sheet metal business, is retiring from business. This business was founded in 1876 by P. H. Latourrette, and was continued in 1898 by J. Latourrette. In 1905, the firm of Latourrette & Fical took over the business, and continued until the corporation was formed in 1910. Mr. Latourrette will continue at the Sacramento address until all contracts already undertaken are completed. M. B. Carpenter and J. H. Mendenhall will continue the plumbing, heating and ventilating business at the old address, 907 Front street.

Minden, Nebr.—Steffensen & Campbell, recently from Gothenburg, Nebr., have purchased the plumbing and

heating business of the late W. L. Light, and will operate a heating and plumbing contracting business.

Williams, Ariz.—E. C. Nebe has reopened the Sanitary Plumbing Shop, 213 West Railroad avenue, which was formerly conducted by Brown & Regan.

Lenoir, N. C.—The partnership between F. P. Mooney and L. J. Seagle, operating under the name of Mooney-Seagle Plumbing and Heating Company, has been dissolved. Mr. Mooney has purchased the interest of his partner, and the business will be operated under the name of Mooney Plumbing and Heating Co.

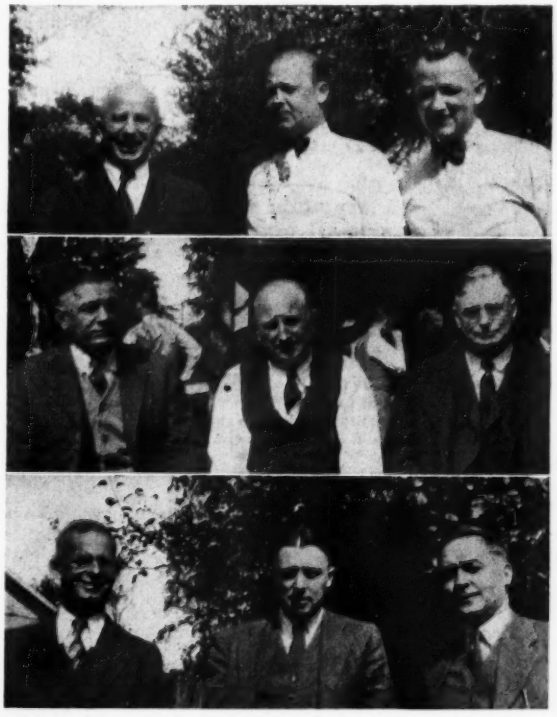
Phoenix, Ariz.—The Valley Plumbing & Sheet Metal Works has moved into new quarters at 532 West Adams street, where it has ample space for shop, office and display purposes.

Seattle, Wash.—The Hogaboom-McNeal Co. has succeeded to the business of the Hogaboom Heating & Ventilating Co.

Munising, Mich.—Levine Brothers, who have been conducting a plumbing business in Marquette for a number of years, have opened a branch establishment in the Marks building, Munising. Andrew J. Robare will be in charge.

Louisville, Ky.—F. H. Scott, for the past year at 837 East Broadway, has recently moved to property which he purchased at 312 West Oak street, where he will conduct his plumbing and heating business.

Seattle, Wash.—Benjamin L. Randall has purchased the interest of Patrick J. Lavan in the Randall & Lavan Plumbing & Heating Co., 116 Wall street.



Top row: Ed. F. Crawford, M. B. Crawford & Son Co., Oswego, N. Y.; L. A. Cookson, manager, Heating and Piping Contractors Syracuse association; R. M. Bentley, field representative, Heating and Piping Contractors New York State association. Middle row: Charles Klein, William Frey and E. B. Dunkerton. Bottom row: A. L. Rosenbloom; F. R. Dunkerton, Pierce, Butler & Pierce Mfg. Corp.; George Smith, The Hunting Co. Photos taken at the outing of the Syracuse association

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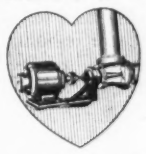
ELECTRICALLY CIRCULATED
HOT WATER HEATING



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facts for the Architect, the Heating Engineer, the Heating Contractor

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Lower Heating Costs
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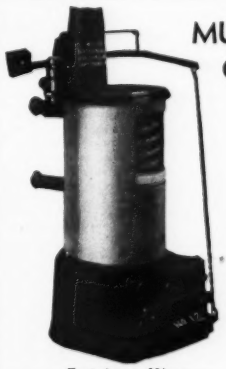


Cut Away View

MULTI-FLOW TANK HEATER
Copper Coil, Bronze Fittings

This coal burning heater is substantially built to give years of service without trouble to owner or plumbing contractor. An efficient hot water producer, with steaming hot water for all domestic needs 24 hrs. a day. Made in 3 sizes, average residence No. 12; large residence No. 16; apartments, clubs, etc., No. 20. Aqua-Matic Regulator outfit maintains constant fire. Write for prices and Bulletin 52A.

THE NATIONAL PIPE BENDING CO.
Est. 1883
174-L River St., New Haven, Conn.
Boston . New York Philadelphia

BULL YOUR OWN MARKET

Perhaps you are not called upon to sharpen your pencil, as often as last year or year before, over new installations of home heating equipment.

But don't worry—there's no money in those jobs anyway—competition takes care of that.

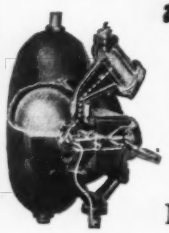
The people, though, are ready to buy clean heating freedom. They are sick and tired of hard fuel.

And for every bid you miss on new stuff, there are a thousand prospects waiting for you to come and let them buy a COLUMBIA Conversion Type Gas Burner which will make their old heating plant into a new and mighty efficient unit.

The Columbia Burner Company, 1645 Dorr St., Toledo, Ohio, have some mighty interesting facts and figures for those who, by a little push, are willing to make money.

Write them. They'll tell you how to bull your present market.

It never forgets the boiler water line



People forget to turn feed water on or off—but this new self-cleaning duplex feeder is built to remember *always*. The self-cleaning feature takes it out of competition. Write for new booklet.

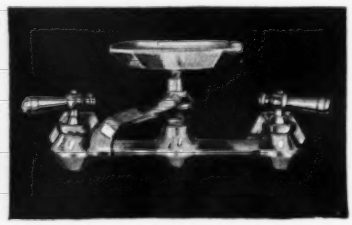
McDONNELL & MILLER
400 N. MICHIGAN AVE., CHICAGO
Eastern Office: Grand Central Terminal New York, N. Y.

Self-Cleaning Duplex Feeder

NOW ONLY $14.00
to your customers

Never before sold under twenty dollars.

SPEAKMAN DIAMOND SINK . . . FIXTURE K-5502-M

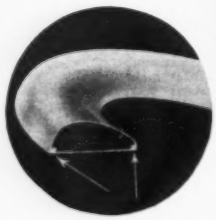


Finished in beautiful sparkling Speakman Chromium Plate.

Here is a real opportunity to make more money on replacement work. Tell us if you want literature featuring the Diamond Sink Fixture to mail to your customers.

SPEAKMAN COMPANY :: *Wilmington, Delaware*

"Two little White Squares" give big sales advantage



See them in the cross-section. They form a reinforcing cushion of pyralin at the critical edges of the sheet-covered type seat, 9 times thicker and 800 percent stronger. A guarantee against ugly edge-cracking and splitting, they insure *permanent* beauty for the owner and positively end costly replacement service for the trade. Exclusive with Brunswick. Send for free cross-section and complete information of our sales proposition and co-operation. The Brunswick-Balke-Collender Co., Dept. F-27, 623 South Wabash Ave., Chicago.

Brunswick

WHITE SEATS

EXPANHUB SOIL PIPE

You can insure your jobs against leaky joints due to the contraction and expansion of soil, waste and vent lines, and the natural settlement of buildings, by insisting on this better pipe. *It costs nothing extra.* Ask your wholesaler or any of the manufacturers.

Manufactured to uniform specifications and sold by
ALABAMA PIPE COMPANY STRINGER BROS. CO., Inc.
ANNISTON FOUNDRY CO. THE WETTER PIPE CO.
INTERSTATE FOUNDRY COMPANY

Pipe —— Lines
Connected by LYT

FOOTBALL LOOKS AT MUSIC

It was a busy day. The city editor had only his special reporter for football games on hand, and there was an important concert by the local orchestra, playing some heavy symphonies. This is the report of the symphony concert turned in by the football expert:

"Yesterday, in the Music Hall, the local orchestra turned in a heavy symphonic score. With Giovanni Sapristi calling the signals, the first number opened with an old-fashioned line plunge, with every player in it. This continued almost entirely through the first quarter (there were four movements to the symphony). Another line plunge opened the second quarter and then, signalling out one of the violinists, Maestro Sapristi gave him the word. He tucked the melody under his chin and reeled off fifty yards or so of the finest open-field work I have ever watched. Through the secondary defense of difficult passages he went with little more than a toss of his head and the end of the second quarter found him still going strong. The third and fourth quarters were full of thrilling moments, although for the most part the audience lost the melody in a succession of new and fiercer line plunges by all the players. It was almost too difficult to follow the ball. But every once in a while one player would break free for a while before being downed by a mass attack. The last quarter ended with a deceptive play, the melody ball being passed back of the line of scrimmage, formed by the bass violinists, from the horns to the fiddles, back to the wood-winds and the harpists. At the last note, the solo violinist had been given his head and in a brilliant succession of runs, crossed the goal line well before the rest of the players could gang up on him."

HOME TO MOTHER

"He threw a slipper at me," sobbed the unhappy daughter, home with mother after a domestic quarrel, "and then he told me to go to the devil."

"You did right in coming to me," said the mother.

P. G. N., Chicago.

LIMERICK EPITAPH

Late for the show was Piccolo Pete
He fought the traffic on every street,
Sideswiped a truck, crashed into a pole,
Now plays a harp with all his soul.

T. N. T., Oakland, Calif.

MANY THANKS

The colored gentleman had taken hold of his courage with both hands and gone for a flight in an airplane. As he climbed out of the ship on its return to the field, he turned to the pilot and said: "Suh, ah has to thank you for both of dem rides."

"What are you talking about?" asked the aviator. "You had only one ride."

"No, suh," retorted the colored gentleman. "Ah done had two—mah fust and mah last."

S. L. M., Philadelphia.

SIDE GLANCES

"Ephraim has a wide acquaintance."

"Yes; I saw him with her last night."

"But you guaranteed this watch would last a lifetime."

"I know, but you didn't look healthy the day you bought it."

LEIGHTON'S GLOOM CHASER.

HISTORY AS SHE IS WRIT

Quizz—"What did Paul Revere say at the end of his ride?"

Quip—"Whoa!"

—INTERNATIONAL NEWS.

Every time I come to write this long last line, it appears to be a long-lost line.

L Y T.

Bath a Day Movement

If there is a master plumber, or an association, anxious for material around which to build sound publicity efforts, we recommend "The Story of the Bath." This fascinating little booklet has been distributed by master plumbers and their associations to the school children of 172 cities and towns in the United States. In many cases the result in publicity has been most satisfactory—and in all cases the booklet has done much to present the plumber in a new light to the people of his community

172

"The Story of the Bath" was written as the clinching effort of the Bath a Day Movement. Hailed by those who have had experience in publicity work as one of the finest educational efforts ever put forth by an industry, the Bath a Day Movement has carried the slogan "A Bath a Day Keeps You Fit Every Way" into every corner of the country.

The booklet was written in order that the master plumber might have a piece of literature which would give some idea of the history of bathing. The information is presented humorously, yet accurately, and business men, doctors and educators have expressed hearty approval of it.

If you have never read "The Story of the Bath," write us for a free copy and details concerning the distribution of the booklet in the schools of your community, or its use before your local Kiwanis, Lion, Rotary, or other civic club.

Little Sentences That Sell

Write one of these BLACK BOARD EPIGRAMS on your window or bulletin board each day. Many master plumbers and heating contractors find them real business getters.

Time may be money, but it's work that gives it exchange value.

* * *

When you were born it was just as if a rich uncle had died and left you a half million—hours.

* * *

The greatest bet ever made was the alphabet.

* * *

The chesty man always wears a small hat.

* * *

Many a strong man is paid a weekly salary.

* * *

A lot of people know more than they can find out.

* * *

The only way some people know is the other way.

* * *

Being bad all the time would be almost as monotonous as being good.

* * *

Others loaf, but you merely take a rest.

* * *

There are also a number of fugitives from injustice.

* * *

Even a stationary engine is supposed to run.

* * *

A fool and his boat are soon rocked apart.

◆

Detroit, Mich.—The Michigan Plumbing & Heating Co., 5736 Cheney street, has been incorporated with a capital of $5,000.

WISECO

TUBULAR BRASS GOODS
now regularly furnished with
NICKEL SILVER
BEAD CHAIN

Make Wiseco your standard and benefit by forward looking manufacture

J. B. WISE, Inc., Watertown, N. Y.

PACIFIC

Welded steel construction for long life and few repairs . . . large combustion chamber to completely burn the fuel . . . extra direct heating surface, long fire travel to utilize every possible heat unit—these are some of the points which make Pacific Welded Steel Heating Boilers more satisfactory in service and more economical of fuel. In skyscraper or bungalow, they mean lower monthly heating costs. Architects, heating contractors, building and home owners will profit by writing for full information.

PACIFIC STEEL BOILER CORPORATION
General Offices: Detroit, Mich. *Factories:* Waukegan, Ill., Bristol, Pa.
Sales Offices in 58 Cities
Division of the United States Radiator Corp., Detroit, Michigan

The Hotstream
HEATS IN A HURRY
TRADE MARK REG.
WATER-HEATER

KEROSENE HEATERS—
WICK BURNER TYPE

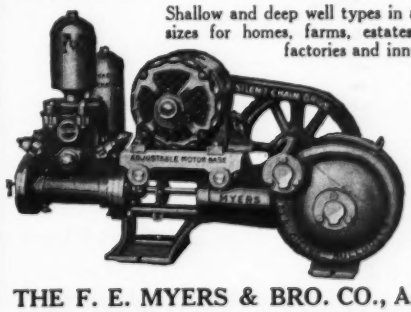
Quadruple coils of copper and the patented Kerogas Burner (Hotstream is the only Water Heater licensed to use it) insure the greatest efficiency.

Lights instantly at the touch of a match—is noiseless, sootless and extremely economical.

Made in 3 sizes—write for complete information.

THE HOTSTREAM HEATER COMPANY
7800 Finney Ave. *"Makers of Heaters that Heat"* Cleveland, Ohio

MYERS SELF-OILING POWER PUMPS



Shallow and deep well types in a wide range of sizes for homes, farms, estates, mills, mines, factories and innumerable other places. Recent improvements simplify installation and maintenance and give them greater sales and service values than ever before.

Write or Wire.

THE F. E. MYERS & BRO. CO., Ashland, O.
PUMPS—WATER SYSTEMS—HAY TOOLS—DOOR HANGERS

COLEMAN'S

Inspect Coleman's Sectional Sewer and Conduit Rods in 3 or 4 ft. lengths at your jobber's. Note the firm construction of second growth hickory, the improved malleable iron coupling and the ease with which they may be handled.

The Coleman Basin Dip is of heavy galvanized iron, durable and reasonable in price.

From your jobber or write

ALLAN J. COLEMAN
208 N. Wabash Ave. Chicago, Ill.

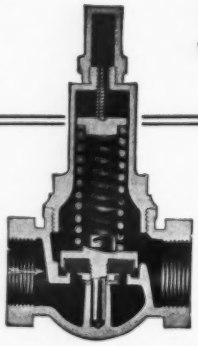
Why is this clock a sales-clincher?

Because it gives your customers an hour's extra sleep every morning, and *saves fuel.* Jewell *clock*-equipped, low-voltage Temperature Regulators operate either from transformer or two dry cells. For profit, push the Jewell Line

Jewell TEMPERATURE REGULATOR

There's a Jewell for every heating plant and for every budget

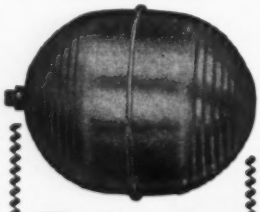
KIELEY "SIMPLEX"
Water Pressure Regulating and Relief Valve



In high buildings where pressure must be maintained equally, this valve will be found almost indispensable. It is also used to good advantage on hot water storage tanks and pumps as a water pressure relief valve.

Our complete catalog is chock full of important and simple information regarding this Valve and Water Feeders. We advise you to write for it before ordering

KIELEY & MUELLER, INC. :: 34-38 West 13th Street New York, N. Y.



Toledo Solderless Floats
From your jobber

Water conditions hold no terror for Toledo Floats. Install them where inferior floats have failed. Stop those complaints about floats that crack, break or leak.

Order them from your jobber

The Reichert Float & Mfg. Co.
2238 Smead Avenue
Toledo Ohio

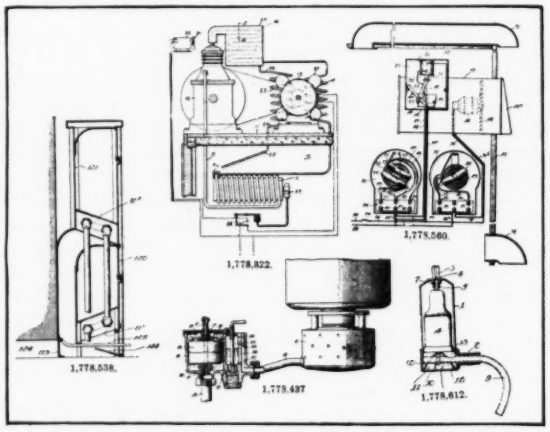
PATENTS

Heating Department

1,778,322. Refrigerating Apparatus. Harry B. Hull, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware.

1,778,437. Fuel-Head Control for Oil Burners. Ben Valjean, Lansing, Mich., assignor to Motor Wheel Corporation, Lansing, Mich.

1,778,538. Heating Device. Reuben N. Trane, La Crosse, Wis.

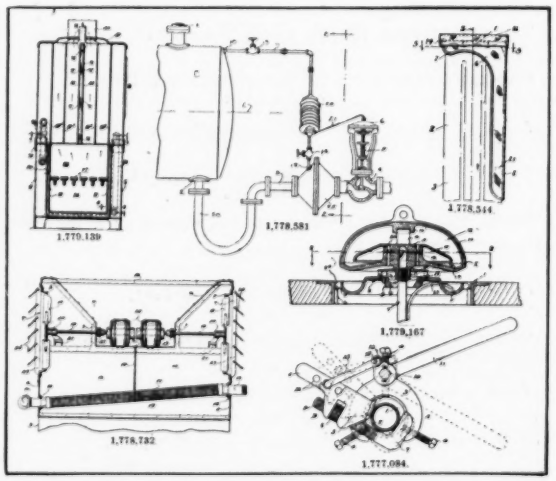


1,778,560. Ventilating System and Apparatus. Charles A. Marsh, James L. Strahan, and Albert H. Neller, Fairfield, Iowa, assignors to The Louden Machinery Company, Fairfield, Iowa, a Corporation of Iowa.

1,778,612. Air Valve. Frederick H. Tweed, Chicago, Ill., assignor to Dole Valve Company, Chicago, Ill., a Corporation of Illinois.

1,777,084. Pipe-Tightening Tool. Joseph F. Heer, Washington, Pa., assignor to The Ridge Tool Company, North Ridgeville, Ohio, a Corporation of Ohio.

1,778,732. Twin-Unit Heater. Edward H. Seelert, Minneapolis, Minn., assignor to McQuay Radiator Corporation, Minneapolis, Minn., a Corporation of Delaware.



1,778,581. Drainage Control for Steam Trap. Frederick M. Bosworth, Cleveland, Ohio, assignor to The Swartwout Company, Cleveland, Ohio, a Corporation of Ohio.

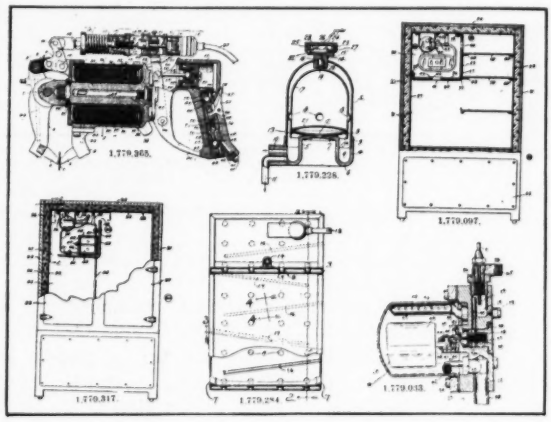
1,779,139. Combined Heater and Radiator. Thomas E. Murray, Brooklyn, N. Y.; Joseph Bradley Murray, Thomas E. Murray, Jr., and John F. Murray, executors of said Thomas E. Murray, deceased, assignors to Metropolitan Engineering Company, a Corporation of New York.

1,779,167. Oil Burner. Theodore H. Ickenroth, Lomita Park, Calif.

1,779,544. Radiator Shield. Jack Adler, St. Louis, Mo.

1,779,033. Refrigerating System. Philip W. Des Roches, Detroit, Mich.

1,779,097. Refrigerating Apparatus. Jesse G. King and Harry B. Hull, Dayton, Ohio, assignors, by mesne assignments, to General Motors Research Corporation, Dayton, Ohio, a Corporation of Delaware.



1,779,228. Relief Valve for Heating Systems. John Ellberg, New York, and Magnus Cronwall, Brooklyn, N. Y.

1,779,284. Refrigerating Apparatus. Glenn Muffly, Detroit, Mich., assignor to Copeland Products, Inc., Detroit, Mich., a Corporation of Michigan.

1,779,317. Refrigerating Apparatus. Harry B. Hull, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware.

1,779,365. Portable Welding Machine. Edmund J. von Henke, Chicago, Ill., assignor to American Electric Fusion Corporation, Chicago, Ill., a Corporation of Illinois.

Plumbing Department

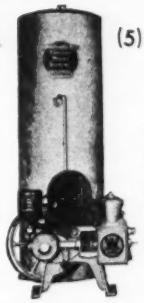
1,779,273. Art of Making Enamel Ware. Oscar Hommel, Pittsburgh, Pa. In the manufacture of enamel ware having a body of metal and a surface coating of vitreous nature the procedure herein described which consists in coating the surface of a body of a ferrous metal with a film of oxide of another metal selected from a group consisting of cobalt, nickel, and manganese, and forming the enamel coating upon the surface so prepared. In the manufacture of enamel ware the procedure herein described which consists in coating the surface of a body of iron or steel with carbonate of cobalt, reducing the coating to a film of oxide upon the surface, and forming upon the film covered surface a coating of enamel.

1,778,300. Flat-Rim Sink. Charles Ramstead, Okmulgee, Okla.

82,348. Pedestal for Lavatory Basin. George Sakier, New York, N. Y., assignor to Standard Sanitary Manufacturing Company, New York, N. Y., a Corporation of New Jersey.

1,779,319. Sewage-Ejecting Mechanism. Irving C. Jennings, South Norwalk, Conn.

(1) EASY TO INSTALL
(2) FREE FROM SERVICING
(3) LOW PRICE
(4) CONVENIENT PAYMENT PLAN



(5) PERFECTED AUTOMATIC CONTROL

Send for the Catalog

Write the Small Electric Plant Section, Westinghouse Electric & Mfg. Co., East Pittsburgh, for complete information about Westinghouse Water Systems.

Westinghouse

ELECTRIC WATER SYSTEMS (*Automatic*) 11-15-30

NEVER-SPLIT AND EVERNU

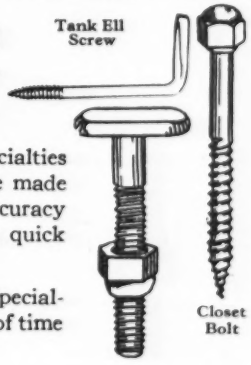
QUALITY TOILET SEATS

Sheet Covered—Hard Rubber—Varnished—Sprayed—All Models
All Colors—All Hinges—Patented and Guaranteed

"NEVER-SPLIT" (Hidden Screw Construction) and "EVERNU" (Hard Rubber) Seats are approved by leading architects, builders and dealers everywhere. Get prices from your jobber. Write us for new catalog, cross sections and sales helps.

NEVER-SPLIT SEAT CO., Evansville, Ind., U. S. A.

Buy them from HINDLEY



You won't find Hindley Specialties difficult to handle. They're made strong and with greatest accuracy in the threads, facilitating quick application.

Put in a stock of Hindley Specialties now. They'll save a lot of time in the coming months.

HINDLEY MFG. CO., Valley Falls, R. I.

1903-1930

Over a Quarter Century of Service

A-1 QUALITY ACCURATE GAUGE PROPER TAPER
CORRECT NUMBER OF THREADS
PROMPT SHIPMENT OF ORDERS ECONOMICAL PRICES

All backed by twenty-seven years of manufacturing experience are assurances of your satisfaction with

"RAVENA" IRON PIPE FITTINGS

RAVENA IRON CO., Ravena, N. Y.

NO-SOL COPPER FLOATS

4"x5" Oval Float

No-Sol Floats incorporate all features necessary to the satisfactory performance of a tank float.

Each float is individually tested and guaranteed.

5" Round Float

The AYLING & REICHERT CO.
3047 N. Erie St. Toledo, Ohio

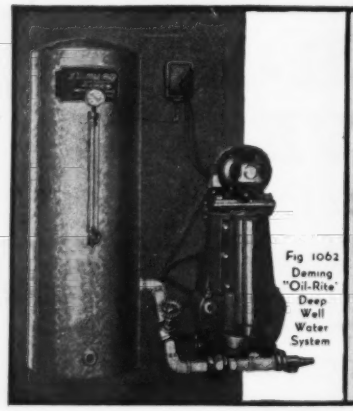


Fig 1062 Deming "Oil-Rite" Deep Well Water System

DEMING WATER SYSTEMS

WRITE for Water System Catalog L, which gives complete information on Deming Shallow and Deep Well Water Systems.

THE DEMING CO.
SALEM, OHIO • Est. 1880

Sensible Rates *Garage Attached*

The Breakers

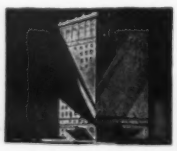
— ON THE OCEAN FRONT —

Atlantic City — N. J.

Modern in construction, luxurious in appointments and convenient to all piers and amusements.

St. Louis'

FINEST **HOTELS**



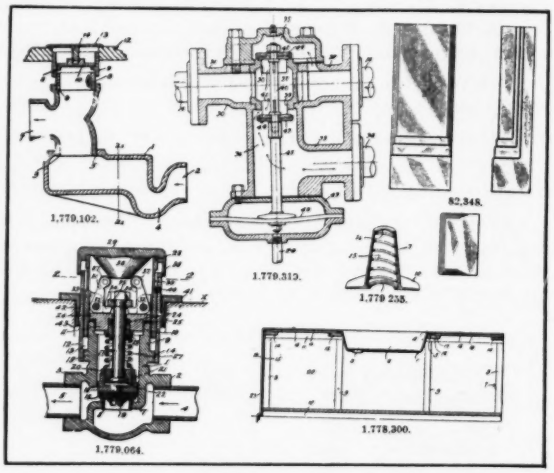
Mayfair — 8th and St. Charles. The quiet atmosphere of an exclusive club. *400 Rooms—Bath in each Room — Rates from $3.00.*

Kings-Way — Kingshighway at West Pine. Opposite beautiful Forest Park. *Room and Bath for 2 from $4.00.*

Lennox — 9th and Washington, Saint Louis' newest, smartest. Tub and shower in every room. *400 Rooms — Rates from $3.00.*

Operated by Heiss Hotel System

1,779,064. Valve. William H. Gohring, Queens, N. Y., assignor to Meyer-Sniffen Co., New York, N. Y.



1,779,102. Bath Trap. William H. Oldfield, Rochester, N. Y.

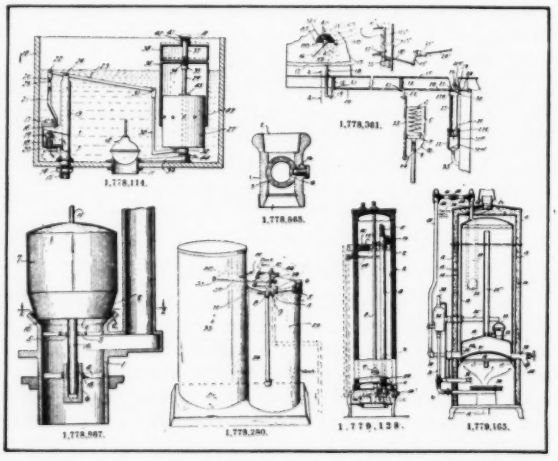
1,779,255. Removable Overflow Drain. Axel Killander, Chicago, Ill.

1,778,114. Tank-Filling Valve. Charles E. Mace, Denver, Colo.

1,778,280. Water Softening and Regenerating Apparatus. Melvin Shetler, Flint, Mich.

1,779,128. Immersion Electrical Water Heater and Method of Operating the Same. William J. Handley, Jackson, Mich., assignor to Handley-Brown Heater Co.

1,779,165. Water Heater. William L. Hallett, Arlington, Mass.



1,778,361. Regulator for Hot-Water Heaters. John H. Grininger, St. Paul, Minn.

1,778,865. Valve. Alexander W. Moseley, Evanston, Ill., assignor to Sloan Valve Company, Chicago, Ill.

1,778,867. Flushing Apparatus. Frederick Opperman, Greenwich, Conn.

1,780,297. Process of Electric Flash Welding. Warren F. Heineman, Shorewood, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis. The process of electric flash welding comprising first flashing uneven edge portions away to obtain an accurate parallelism of the edges to be welded, then abutting the edges under light pressure while maintaining the application of welding current thereacross.

8 cents for each word including heading and address. Count seven words for keyed address. Minimum $2.00 for each insertion.

CLASSIFIED ADVERTISING

One inch $4.00. Cash must accompany order. Copy should reach us eight days in advance of publication date.

Situations Open

SALESMEN—AN OLD ESTABLISHED house making a full line of plumbing specialties in brass, leather, rubber, etc., could use local representatives in the principal cities of the United States to sell their line, either whole or part time, on a straight commission basis. A very liberal proposition with full settlement at end of each month. This is a high-grade line, with many exclusive items. Will bear the closest investigation. We will not consider anyone who does not at present have a trade acquaintance in their respective city. If you are a resident of one of the larger cities and have a following among the plumbing trade, we can put you in a position to make good money, providing your territory has not yet been allotted. Reference required. All replies treated in strict confidence. Address, stating qualifications, etc., Key 369, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

WANTED: BY PLUMBING AND HEATing concern located in large North Texas city, a competent estimator, who has had practical experience and can layout and run any size job. Prefer young man who could qualify as heating engineer. All correspondence considered confidential. Salary $250.00 per month. Address Key 560, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

REPRESENTATIVES WANTED IN leading cities to handle highest grade line of radiator shields and radiator cabinets. Our representatives earn $500.00 to $1,000.00 per month the year around, above expenses. Full selling plan furnished. Address Key 256, "Domestic Engineering," 1900 Prairie Ave., Chicago.

WONDERFUL MONEY-MAKING EXclusive or side-line proposition for salesmen calling on plumbing dealers. Write us today. KOIL-LES HEATER COMPANY, Geneva, Illinois.

SPECIALTY SALESMAN—WILL HAVE an opening on our sales force December 1st for an experienced specialty salesman to sell our well established high grade line of plumbing specialties in territory of southern Michigan. None but an experienced man will be considered. State age, experience and full particulars. Address LEADER SPECIALTY CO., INC., Indianapolis, Indiana.

Situations Wanted

SALESMAN, FORTY-EIGHT YEARS old, twenty-five years' active selling in Middle West is compelled to locate in Ozarks on account of wife's health. Desires to represent jobber or manufacturer in territory which will permit headquarters in Southern Missouri. Address Key 559, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

Lines to Handle

SALES AGENTS WANTED BY WELL known company manufacturing a complete line of brass valves, including competition and heavy pattern gate, globe, angle and check valves as well as a full line of radiator valves. Several very desirable territories open for producers having proper qualifications. Address Key 564, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

MANUFACTURERS' REPRESENTAtives wanted, to sell old established line of plumbers' specialties to the jobbing trade on a commission basis. Many good territories now open. Only those now calling upon the wholesale trade need apply. Furnish references. Address Key 557, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

Lines Wanted

The Advertiser a Well Known and successful sales representative—for 15 years prominent in the East, representing a well known brass manufacturer, is desirous to take on several lines on commission basis. Warehouse facilities and office arranged for. Excellent record and highest trade references. Substantial manufacturers, catering to the supply houses only, earnestly requested to get in touch with advertiser. Address Key 563, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

MANUFACTURERS' AGENT EXCEPtionally well acquainted with the leading plumbing supply houses in Philadelphia and Baltimore, and adjacent territory, desires one or two lines of staple goods on commission basis. Will only consider lines of merit that are distributed through recognized jobbers only. Address Key 561, "Domestic Engineering," 1900 Prairie Ave., Chicago.

WANTED—QUALITY PLUMBING SPEcialty. Commission basis. Chicago territory. By manufacturers' representative promoting sales through architects, jobbers and plumbers. Address Key 565, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

TUBULAR BRASS GOODS ACCOUNT wanted. Live wire representative in Metropolitan Area of New York interested in hearing from manufacturer looking for volume from discount wholesalers in this territory. Address Key 562, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

For Sale

FOR SALE

1 Toledo standard power drive, 110 volts, single phase, 60-cycle A. C.
1 No. 9 Toledo Work Bench and No. 14 Chain Vise.
1 No. 300 Toledo 4½" to 8" Geared Ratchet Cutter.

The above equipment is brand new and has never been used. We will sell at a substantial discount.

PROVIDENCE PIPE AND SPRINKLER CO.,
167 Dorrance St., Providence, R. I.

Miscellaneous

USED OSTER PIPE MACHINES

2" Oster Portable, No. 412.
2" Oster Portable Gasoline Engine Drive No. 402.
2" Oster Belt Drive No. 300.
4" Oster Belt Drive No. 304.
4" Oster Motor Drive No. 304B.
4" Oster Gasoline Engine Drive on Portable Truck.
6" Oster Belt Drive No. 306.
6" Oster Motor Drive No. 316B.
8" Oster Belt Drive No. 308.
8" Oster Motor Drive No. 308B.

All the above overhauled and complete with equipment as supplied with new machines.

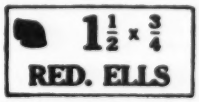
Send for list of other machines in stock. 50 Used Pipe Machines in Stock. THE O'BRIEN MACHINERY CO., 113 N. Third St., Philadelphia, Pa.

OIL BURNERS: GRAVITY AND Power Burners for domestic use; Rotary Power Burners for Commercial and Industrial jobs. Let us quote you on your Burner requirements. RELIANCE BURNER CO., 2219 East 26th Street, Kansas City, Mo.

LETTER HEADS, BILL HEADS, JOB TICKETS, TIME SHEETS, ETC., FOR PLUMBERS

Reasonable prices; quick service. Send for samples. LOUIS FINK & SONS COMPANY, School Building, Laurel Springs, New Jersey.

PLUMBERS' BIN LABELS



Send for samples and prices of card holders, bin labels and stop valve tags, and free booklets: "How to Lay Out the Plumbing Shop" and "How to Train the Apprentice Boys." Haddon Bin Label Co., Haddon Heights, N. J.

Books for Your Trade Library

Merchandising the Plumbing Business. By Karl W. Zoeller..... 1.50
Practical Methods of Sewage Disposal. By H. N. Ogden and H. B. Cleveland 1.50
Questions and Answers on the Practice and Theory of Sanitary Plumbing. By R. M. Starbuck. Vol. I. Drainage and Venting. 2.00

Domestic Engineering

Books Sent Parcel Post Prepaid

1900 Prairie Avenue, Chicago

for mild or zero weather
gas-saving "STANDARD" burners
thousands of jets of blue flame

STANDARD HEATING & RADIATOR COMPANY *Manufacturers* 240 Penn Avenue, Pittsburgh, Pa.

MORE than fifteen years unfailing continuous economical operation in hundreds of largest and small boilers and hot air furnaces. *Reliable, Durable. Catalog Prices.*

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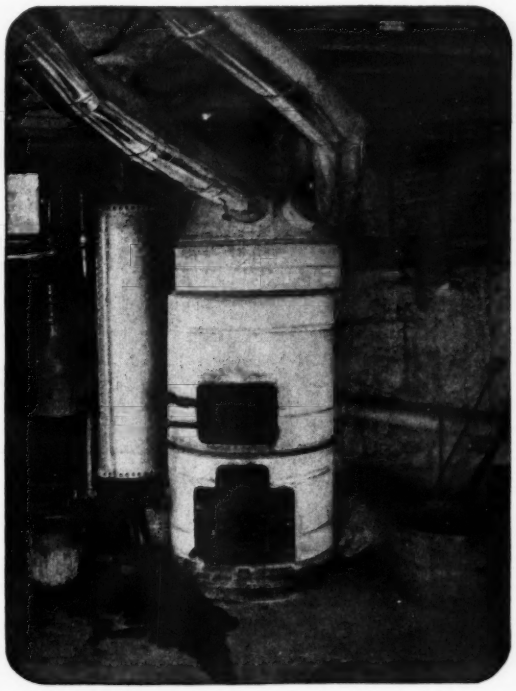
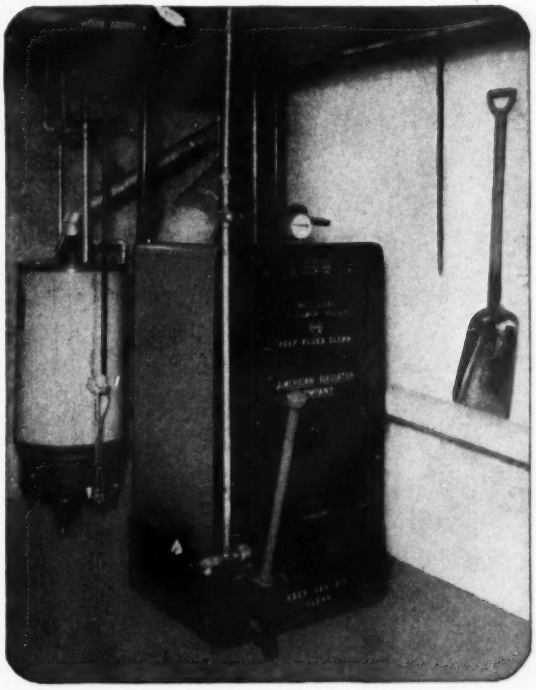
Two pictures of the same basement

...BUT WHAT A DIFFERENCE IN *looks, warmth and comfort*



"BEFORE"

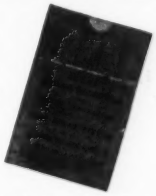


"AFTER"

WHEN the heating contractor sold this owner the idea of modernizing the heating equipment he was doing that owner a real service. But more than that, he was actually creating work for his shop and profits for his bank account.

Right now when new building work is scarce is the time to make a canvass of the old buildings in your neighborhood. Show the owners how modern American Radiator heating will transform their homes and actually save fuel. And tell them too how it can be paid for a little down and a little each month.

That is the message we are sending over the radio—explaining how simple it is to pay for modern comfort through any Qualified Dealer.



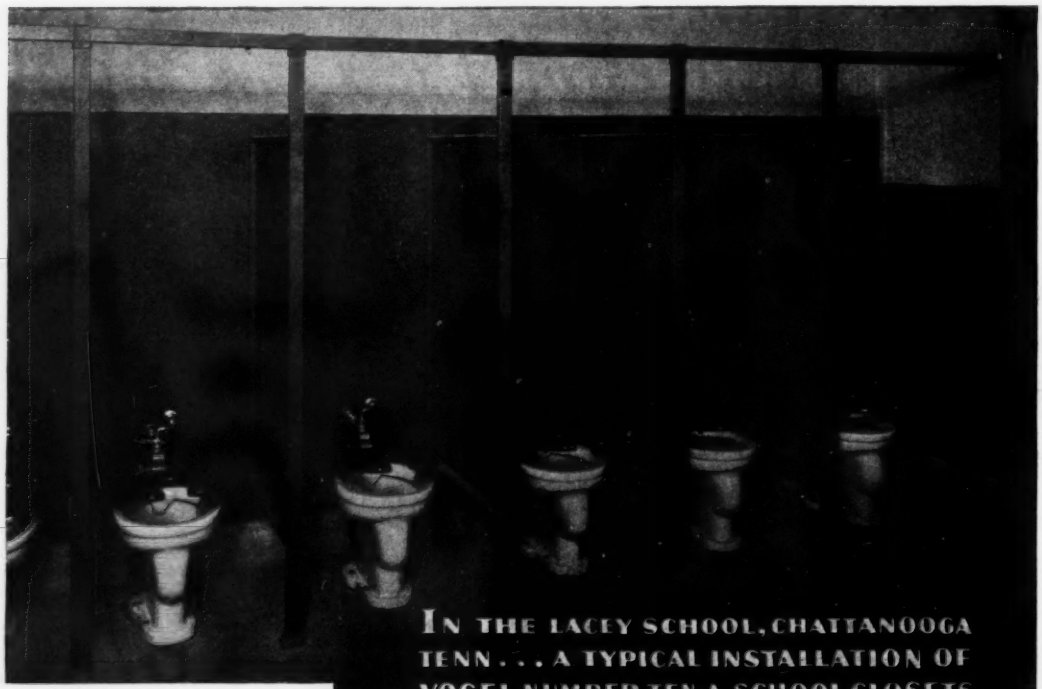
Did you get
YOUR COPY..?
The Ideal Boiler Selector makes it easy to tell instantly just what boiler should be installed on any job. Write us for a copy.

AMERICAN RADIATOR COMPANY

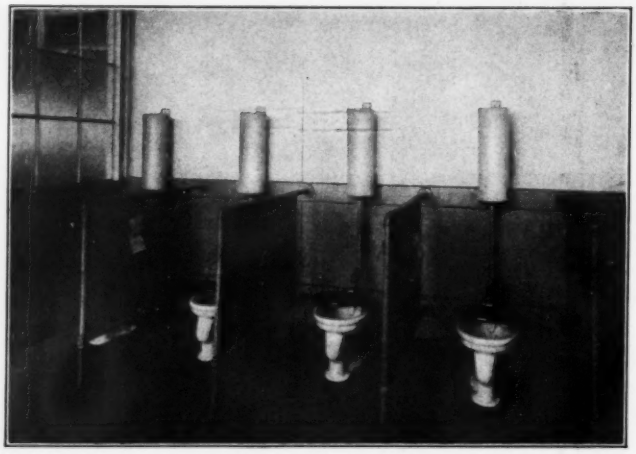
Division of

AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

40 West 40th Street, New York


IN THE LACEY SCHOOL, CHATTANOOGA TENN. . . A TYPICAL INSTALLATION OF VOGEL NUMBER TEN-A SCHOOL CLOSETS THE TANKS ARE CONCEALED BEHIND THE WALL

ARCHITECT . . .
William Crutchfield
PLUMBING CONTRACTOR . . .
Rubin Harris, Brainerd Plumbing Co.



A typical installation of Vogel Number Ten Closets. Photograph taken in the Pusey & Jones plant, at Wilmington, Del.

THESE INSTALLATIONS PAY YOU REAL PROFIT!

. . . and VOGEL Number Ten and Ten-A Closets are designed especially for this kind of work . .

MORE and more plumbers are going after the big profits installing **VOGEL** Number Ten and Ten-A Closets in schools, factories, and institutions.

A good example is in the illustrations on this page, showing **VOGEL** Number Ten-A Closets in the Lacey School, Chattanooga, and the Number Tens in the Pusey & Jones plant in Wilmington.

All your customers know **VOGEL** products because of the advertising we are doing year after year, using pages in 15 or more publications. So go after these big jobs that pay the real profits, and we'll help you get this business with folders and blotters, imprinted with your name and address. Tell us how many you need.

JOSEPH A. VOGEL COMPANY
Wilmington, Del. St. Louis, Mo.

See inside front cover for Vogel Frost-Proof advertisement.

. . . VOGEL PATENTED *Products* . . .